SEPTEMBER
1952

Amateur Radio

JOURNAL OF
THE WIRELESS
INSTITUTE OF
AUSTRALIA

For the Experimenter
and Radio Enthusiast

9D.

Registered at G.P.O., Melbourne, for transmission by post as a periodical.

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SEPTEMBER — — — 1952
Vol. 20. No. 9.

EDITOR:
T. D. HOGAN, VK3HX,
Telephone: UM 1732.

MANAGING EDITOR:
J. G. MARSLAND, VK3NY.

TECHNICAL EDITOR:
J. C. DUNCAN, VK3VZ.

TECHNICAL STAFF:
L. B. FISHER, VK3AFF.

COMPILATION:
R. W. HIGGINBOTHAM, VK3RN.

CIRCULATION:
I. K. SEWELL, VK3IK.

ADVERTISING REPRESENTATIVE:
W. J. LEWIS,
20 Queen St., Melbourne, C.1.
Telephone: MU 5154.

PRINTERS:
"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.1, on or before the 8th of each month.

Subscription rate in Australia is 9/- per annum, in advance (post paid) and A10/6 in all other countries.

Wireless Institute of Australia (Victorian Division) Rooms' Telephone is FJ 6997.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc. and re-broadcast on 50 and 144 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 7146 and 14342 Kc. 7065 Kc. channel is used from 0930 to 1030 hours each Sunday for the W.I.A. country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5DW by arrangements only on the 7 and 14 Mc. bands.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays, at 1000 hours EST, on 7146 Kc. and 146.5 Mc. No frequency checks are available.

AMATEUR RADIO

Published by the Wireless Institute of Australia,
Law Court Chambers, 191 Queen Street,
Melbourne, C.1.

EDITORIAL

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Members of the Wireless Institute of Australia living in country areas may be able to erect large and effective antennae to the discomfort and envy of their city brethren, but they suffer from the disadvantage of not being able to attend monthly meetings of their Division.

At these meetings, much information is given to members concerning the activities of their own Division and the activities of the Institute as a whole. Although much of this information is disseminated in weekly broadcasts and in this magazine, quite a lot of information never reaches the members who cannot attend meetings. Thus a position is created where members do not know what is going on and why.

It is of vital interest to all members to know what is going on because the growth of any organisation is dependent upon the amount of interest it creates amongst its members, and the recruiting of new members is difficult or well nigh impossible, in an organisation which is almost stagnant.

With a view to creating and stimulating interest in our organisation, Federal Executive believes that, in addition to weekly broadcasts and the news distributed at meetings, members should have available to them some record of what is being done by Federal Executive on their behalf. Although this information is available at monthly meetings, the country member does not receive it and is, therefore, largely without information.

This and future issues of the magazine will contain a resume of the minutes of the proceedings of Federal Executive by which means it is hoped that members will be better informed than they have been in the past.

Furthermore, members will be able to judge whether or not and along what lines many matters, some of them contentious, are being handled.

Although only a resume can be given owing to the space factor, Federal Executive feels that the information provided will assist members to understand the machinery by which the Institute works and to have first hand information on what is afoot.

FEDERAL EXECUTIVE.

THE CONTENTS . . .

Effects of Electricity on the Human Body

By W. B. KOUWENHOVEN,* Fellow A.I.E.E.

One of the causes of death on this planet that has existed since the time of creation is lightning. The true nature of this cause, however, was not recognised until the researches of Benjamin Franklin, 1749 to 1752, established the fact that a lightning stroke was an electric discharge on a grand scale and involved the flow of an electric current.

In 1753 one of the experimenters in this field, Richmann, of St. Petersburg, was killed by a discharge. The first man-made electric shock of which we have any record occurred in Holland in 1746, when two Dutch physicists unintentionally discharged a Leyden jar through their bodies. The first reported death due to man-made electricity occurred in France in 1879, and the second in Scotland a year later. Today in the United States and Canada the number of fatalities annually ascribed to electricity is seven per million of population, and approximately half of the accidents reported are fatal. In the utility field the number of deaths of employees ranges from 70 to 80 per year.

Amateurs generally take far greater risks than they should when handling high voltages in their transmitters, and in reading this article, for which we are indebted to the State Electricity Commission, take particular note of the section on ventricular fibrillation, which is in effect, an oscillation of the heart caused by LOW VOLTAGES, and if that happens, unless medical assistance is at your side, means CERTAIN DEATH.

Read, take precautions, and finally think before you plunge your hand into the transmitter.

FACTORS

In determining the effects of the passage of an electric current through the body there are certain factors that should be taken into consideration. They are:—

1. Type of circuit with which contact is made.
2. The voltage of the circuit.
3. The resistance offered by the human body.
4. The value of the current that flows through the tissues.
5. The pathway of the current through the body.
6. The duration of the contact.

These six factors are related to each other and no attempt has been made to arrange them in the order of their importance. In some instances it is impossible to discuss a single factor separately.

The Circuit. The type of circuit and its voltage, with which contact is made, have a profound effect upon the resulting injury. D.c. circuits do not produce the strong contraction of the muscles that is found with alternating current, and in general the sensation produced by direct current is greatest when the circuit either is made or broken. Low voltage d.c. circuits are not as dangerous as the corresponding a.c. circuits. In fact, there is only one case on record that the author has knowledge of where a man was killed on a 120 volt d.c. circuit in which there was no possibility of a high induced voltage due to the opening of a field circuit or similar cause. On the other hand, contact with high-voltage d.c. circuits is more apt to be fatal than contact with alternating circuits of the same voltage. In cases of lightning shock the musculature contraction is usually absent.

With alternating current there is little if any significant difference in the reactions of the body to shocks from 25 and 60 cycle circuits. Dalziel has found that the response of the human body is practically uniform for frequencies ranging from 10 to 300 cycles per second. At 1,000 cycles, a somewhat greater value current is required to produce a given reaction, while very high frequencies, such as are used in diathermy, have only a heating effect.

The effects produced by interrupted direct currents vary not only with the period of the interruption, but also with the cycle followed. An exponentially rising unidirectional current is the most efficient for the stimulation of nerves. As such wave forms are difficult to generate, square or rectangular waves usually are employed. Square waves are almost as effective as the exponential type, and they are generated and controlled more easily.

Voltage. People recognise that high voltages are dangerous. However, they should be equally careful of low voltages. There are a number of cases on record where contact with 60 and 65 volt circuits of commercial frequencies have resulted in fatal accidents. The lowest voltage fatality of which the author has any record occurred at 46 volts, 60 cycles. It is probable that circuits of 24 volts or less may be considered as safe under practically all conditions.

Resistance of the Body. The resistance of the body consists of two parts, that offered by the skin at the points of contact, and the internal resistance. The skin consists of two principal layers. The outer skin or epidermis is from 0.05 to 0.2 millimeter thick. It is non-vascular and on the palms and bottoms of the feet horny and calloused. The inner skin. or derma, is from 0.5 to 1.7 millimeters thick and contains blood vessels and nerves. Dry epidermis has a high resistance which may reach 100,000 ohms per square centimeter. The resistance offered by the inner skin is low, as body fluids and blood are good conductors because of their salinity. In fact, the only poor conductors inside the body are the bones. The internal resistance of the body is therefore relatively small.

The equivalent electric circuit of the body consists of three parts. Where the current enters, the epidermis acts as capacitor with a poor dielectric. The tissues of the body act as pure resistances and provide a homogenous path for the passage of an electric current. At the point where the current leaves, we again have a capacitor with a poor dielectric. This may be demonstrated by taking an oscillogram of the current when a continuous potential of 50 volts is applied to electrodes held in the hands. At five microseconds after closure of the circuit a current of 19 microamperes was recorded. At 500 microseconds the current had fallen to three microamperes. At 10,000 cycles the power factor of the body of a normal healthy person is about 0.1.

The resistance of the skin is not constant. It varies with the amount of moisture that it contains, the temperature, and the applied voltage. Under thoroughly wet conditions, the resistance of the epidermis may fall to as low as 1/100 of its dry value. If contact with a circuit continues for any length of time, the skin loses its protection because of the formation of blisters. At 50 volts blisters form in six or seven seconds. The relationship between a 60-cycle voltage and the resistance offered to the flow of current is illustrated in the following table.

Alternating Voltage	Average Resistance (Ohms)	Range Resistance (Ohms)
50	10,000	5,000-16,000
500	1,200	800- 1,800
1,000	1,100	800- 1,800

These readings were taken three seconds after the circuit was closed, and were made on cadavers. The circuit through the body was from hand to hand. When the epidermis was removed, the resistance was found to be practically independent of the voltage. In general, the skin of the female is of lower resistance than that of the male. This is true for skin taken from such areas as the abdomen and back where callousness is not present. An individual's skin resistance also increases considerably (about double) when asleep.

Current. The value of the alternating current that flows through the body when contact is made with an electric circuit is of extreme importance as it determines the resulting injury. Current values that are of interest are—

1. Threshhold of feeling.
2. Let-go current.
3. The freezing current.
4. The current which an individual can withstand without being rendered unconscious.
5. The current that will produce ventricular fibrillation.
6. The current which will produce a block in the nervous system.
7. The counter shock current.

The current that will just produce a tingling sensation which can be detected at the point of contact, is of the order

* Dean of Engineering and Professor of Electrical Engineering, The Johns Hopkins University, Baltimore, Md.

of one or two milliamperes. Some individuals, particularly women, are extremely sensitive to small currents. Other individuals are not so sensitive. The sensitivity of an individual to detect a small current also varies with his physical state.

It is well known that contact with an electric circuit produces a contraction of the muscles. This contraction may be so severe as to prevent the victim from freeing himself from the circuit. The let-go current is that value of current which an individual can withstand without harmful effects for at least the time required for him to release his hold on the circuit. Professor Dalziel has made an exhaustive study on a representative group of men and women and reports that for men the standard frequency let-go current is nine milliamperes and for women, six. This is the current value that 99.5 per cent. of the individuals tested could release voluntarily. The value of the let-go current varies with the individual and Dalziel found that for men it ranged from 8 to 22 milliamperes.

The current that will hold an individual frozen to a circuit is naturally in excess of his let-go value. Because of the heating produced by the current where it passes through the epidermis and the short time required for the skin to blister and lose its protective resistance, this freezing current should be avoided at all costs. Unless there is someone present to break the circuit, the result may be fatal.

There is no information available as to the current that an individual can tolerate without losing consciousness. The lowest value of current that will produce unconsciousness is somewhere between the let-go current and that required to produce fibrillation.

A current of 100 milliamperes flowing from the hands to the feet is sufficient to throw the ventricles of the heart into fibrillation. This value of current is not large enough to hold the heart in diastole; instead it disturbs the rhythm and co-ordination of that organ. Each individual heart muscle functions without regard to the others, and the action of a heart in fibrillation looks like the ripples that flow across a puddle when a pebble is dropped into it. In this condition the circulation of the blood ceases, because the heart no longer acts as an effective pump.

The current that will produce a block or partial paralysis in the nervous system is of the order of several amperes. The nerve block prevents the signal from the brain reaching the lungs and natural breathing ceases. Artificial respiration should be applied promptly in such cases.

The counter shock current is that current which will bring the ventricles of a fibrillating heart to rest. A 60-cycle counter shock current of between one and two amperes applied directly to the heart will arrest fibrillation. When this current is broken sharply, the heart usually will resume its normal co-ordinated beating. There is no information available as to the most advantageous location of the electrodes nor as to the current value required when the electrodes are applied externally to the body.

Pathway Through the Body. The pathway that the current traverses in its passage through the body is of extreme importance. In general, if there are no vital organs, such as the brain, the heart, or the lungs, in the current path, the resulting injury is a minimum one (burns excepted). For example, in some experiments on rats in which the animals were given a two-second shock at 220 volts, 60 cycles, all those where the current path was from foreleg to foreleg died; while those where the path was from hindleg to hindleg survived.

In most industrial accidents the current path is from the hands to the feet. This path involves the heart and the lungs and is, therefore, particularly dangerous. When contact is made at two points on the same arm or leg, no current passes through the trunk. In fact, when current enters the body via one leg and passes out through the other, no vital organs lie in its circuit.

Once the current enters the body trunk, it follows a more or less fusiform pattern. When through-type current transformers were inserted in the body, it was found that approximately ten per cent. of the total current passed through the heart when the current pathway was from one hand to the feet.

Duration of the Contact. The duration of the contact should be as short as possible, and the higher the voltage, the shorter should be the time of contact, if there is to be any hope of recovery. In fact, duration of the contact should be as brief as the janitor's Christmas.

EFFECTS

The passage of an electric current through the body produces numerous effects that differ not only in intensity, but also in kind. They range all the way from a slight tingling sensation to death. The consequences depend upon the value, frequency, and pathway of the current and on the duration of the shock. The aftermath may be good or evil. An electric shock may produce healing in certain mental diseases or it may produce a state of depression of the vital processes of the body characterised by rapid but weak pulse, rapid but shallow breathing, pallor, restlessness, and a depressed mental state similar to surgical shock or a highly excited, almost maniacal state. Some of the effects produced by an electric current are discussed in the following.

Conscious Phenomena. If the victim of an electric shock retains consciousness during and following the contact, there is often a whistling or ringing in the ears and partial deafness for a time. In addition, there may be visual disorders such as flashes and brilliant luminous spots. Pain and soreness of the muscles are a common reaction. If the shock is a severe one, the victim usually will be restless and irritable. These disorders generally disappear in a few hours.

Muscular contractions are produced when contact is made with an electric circuit. These contractions are particularly marked when the circuit is an alternating one of commercial frequencies. At high voltage the tetanus of the muscles is very sudden and severe. It may throw the victim clear of the circuit. In some instances bones have been broken. The severity of the contraction probably accounts for the soreness that is felt in the muscles. Clonic contractions of the extremities often are observed following a shock and tremors may continue for some minutes.

Convulsions may occur in cases of electric shock. They usually are characterised by irregular muscular spasms and tremors.

Loss of consciousness occurs in many electrical accidents. Sometimes the victim recovers spontaneously; in other cases, either after the application of artificial respiration, or never. Cases also have been reported where the victims lost consciousness when contact with the circuit was made at two points on the same leg or hand, and in which there was no burning of the tissues. Such cases are believed to be due to a severe shock to the system.

Electric burns are of two types, those produced by the heat of the arc, as may result when contact is made with a high-voltage circuit, and those that are caused by the passage of the electric current through the skin and the tissues. Burns resulting from an electric arc are, in general, similar to those produced by high-intensity heat sources. The true electric burn often is characterised by a pinkish mark on the surface of the skin. The burns, however, may penetrate deeply and require considerable time to heal. Jellinik reports a case where the current value was large enough actually to char the flesh at the elbow where there exists only a relatively small amount of body tissue. Burns, blisters, and markings are not necessarily present on the skin after an electric accident. When the skin is saturated thoroughly with water and the contact area is not restricted, a fatal shock may not leave the slightest detectable blemish. Burns produced by electricity usually heal without infection. They, however, heal slowly. In severe cases, fingers or limbs may be lost and death may follow as a secondary effect.

The Nervous System may be so profoundly shocked or fatigued by a contact with an electric circuit that it cannot function normally again for a period of minutes or hours. The nerve cells are injured, especially in areas that have been traversed by the current. Injured cells are characterised by a dark shrunken nucleus, which is often eccentric in position, and the loss of granules. The damage, however, is patchy in distribution so that injured and normal healthy cells lie in close proximity. Autopsy of shock victims also has revealed cavities in the nervous system of 25 to 200 microns in diameter. These may be caused either by heat or electrolysis.

One of the most common effects on the nervous system is the production of a temporary paralysis or block. The location of this block will depend upon the path taken by the current. The lungs or other portions of the body may be paralysed following the shock. There is a case on record where a woman stood with her back resting against the edge of an electric range when the power line was struck by lightning. She received a severe shock which was followed by a temporary paralysis and loss of sensation in both limbs that lasted for about four hours. The many successful resuscitations resulting from

(Continued on Page 5)

Economical Design for a Simple Standby

BY E. A. CHARLES,* VK5YQ

The need for an auxiliary transmitter often arises. Quite frequently you would try out that new idea if you didn't have to QRT to do it. Less frequently something goes haywire and you are QRT until you make the necessary repairs or alterations.

At present most transmitters have become a semi-permanent fixture on twenty metres. When that band is dead (and that's often during present sunspot activity) you end up tuning the other bands and often hear an old friend calling CQ. By the time you have decided to change up (or down) and retuned, he is probably in a "black-out" area, and then you find that DX has broken through on twenty!

There are usually two or three times a year you would operate mobile IF you had the gear made up. And those cross-town chats, the promises to join the v.h.f. gang, and the next R.D. Contest! Why not combine the bare essentials to cater for all contingencies in a "Jubilee Austerity Auxiliary?" Here is one way to do it with about ten watts input for phone and up to twenty watts on c.w.

Firstly, here is a brief summary of the ideas from which it was made up.

"Economy" refers to cost and space, i.e.—

(1) Using a minimum of components commensurate with desired versatility and general usefulness;
(2) Using standard receiver, disposals or junk-box parts where possible;
(3) Making use of the main station's spares and accessories;
(4) Getting the maximum from a minimum current drain.

"Simple" implies **only** the essential controls, and absence of critical adjustments (no neutralisation; no efficiency modulation).

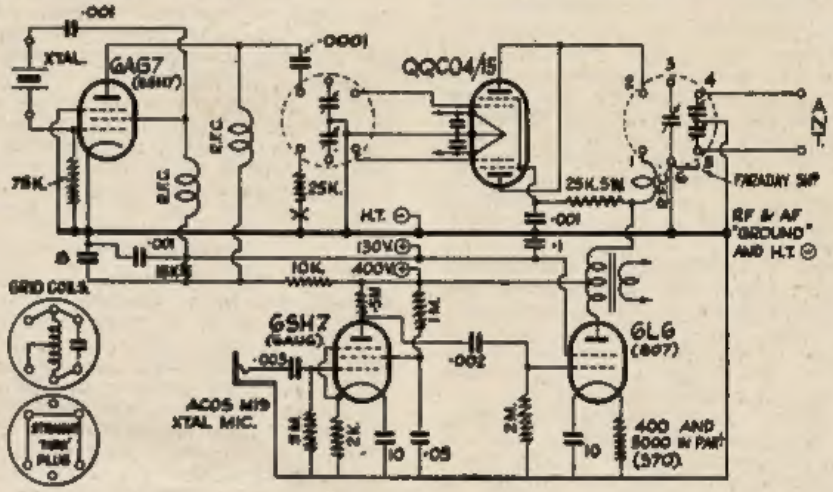
"Stand-By" means a phone-c.w. transmitter for home or outside operation on **all** popular bands, that is capable of easy conversion to a simple transceiver for emergency operation.

* 193 Young Street, North Unley, S.A.

THE POWER SUPPLY

Always remembering that any transmitter is only as good as its aerial system, the mobile one has another limitation—the life and strength of its power supply.

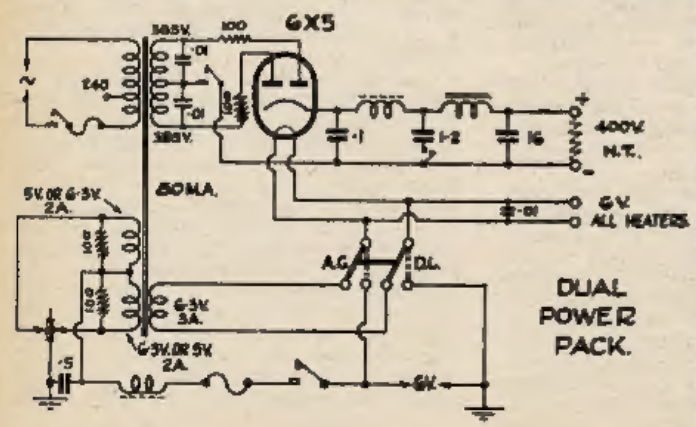
There is a variety of disposals vibrapacks and genemotors available, and, if you have something on hand, the transmitter can be designed to get the full benefit from its voltage and current output. If you are going to make something up, then it is desirable that it can be used to run other equipment when not required on this stand-by transmitter. With the power pack described, switched to choke-input filter, it can be used for a receiver, frequency meter, test equipment, etc.



The only suitable available rectifier for a dual supply is the 6X5. Its ratings per A.R.R.L. Handbook are: 350 volts per plate, 4 uF. condenser input filter, 75 Ma. output. It is possible to draw up to 100 Ma., but it is considered neither desirable nor necessary with the circuit used. A special transformer can easily be made from a "salvaged" b.c.l. tranny. It would be expensive, if bought. The addition of low tension windings is easy and, you could make provision for using a second 6X5 if the transformer is large enough to supply the extra milliamperes. However, a common commercial type suitable is the 385 aside with two or three heater windings. The addition of another five-volt winding will be OK for the vibrator circuit if the transformer has only two low tension windings.

Current limiting resistors in each plate lead and a reduction of the filter input capacity will drop the output to 400 volts under load, and qualify the 6X5 for the "Old Age Pension." (See the A.R.R.L. Handbook chapter on Power Supplies.)

This circuit is taken as the basis for the line-up of the transmitter which, as a result, is limited to an input of 400 volts at 75 milliamperes.



THE MODULATOR

This was quite a long search—the economies of Class B operation were not! It is of little use having ten watts of audio if you have not sufficient milliamperes left to produce five watts of r.f.!

Delving into pre-war valve characteristic pamphlets produced a set of figures for the 6L6 (807) that had to be the answer. With 375 volts on the plate, 125 volts on the screen, a class A 6L6 gives four watts output into a 14,000 ohm load for a total maximum current drain of 26.8 Ma. The plate current is 24.3 to 25 Ma., the screen current 0.7 to 1.8 Ma., and the cathode resistor 365 ohms.

From theory, 50% audio power is required for 100% sine wave modulation; for speech, 30% to 40% is considered quite sufficient. The p.a. plate (and screen) input can thus be around 13 watts. The push-pull (10w.) audio output tranny as a 1 to 1 modulation transformer reflecting the p.a. load as the 6L6's plate load impedance results in only slight impedance mismatch and d.c. unbalance.

Because this is low power, it is no reason for poor quality. The big rig's xtal microphone can be utilised by having a single 6SH7 (6AU6 in miniature) speech amplifier stage driving the 6L6.

The Acos M19 does require close speaking for maximum output, but it is preferred to the use of a carbon mike which requires either a transformer (space) or a tube drawing much more current than the 6AU6 (less than 1 Ma.). The 6AU6 (6SH7) has more gain than a 6J7.

Of the 75 available milliamperes, a steady 25 have now gone to the audio section.

THE R.F. SECTION

Whereas other circuits may be considered more suitable in some applications, this was chosen as the best all-round answer. Circuit switching is by means of the plug-in coils.

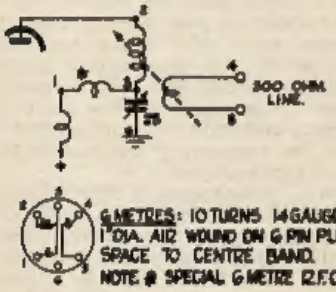
The 6AG7 harmonic oscillator saves a tuned stage and triples better than the tri-tet. It produces the full maximum drive for the final from 10 Ma. plate and 6 Ma. screen currents. Other popular well-screened pentodes as the EF50, 6AC7 or 6SH7 will produce sufficient drive for satisfactory low power operation.

Witness VK5KL's results with 6 watts on 6 metres ("A.R.," July, 1951). The available milliamperes for the p.a. are now 34.

The QQCO4/15 was my choice on account of its socket connections and high efficiency. An 832 would no doubt perform as well, but it requires almost twice the screen current. Note that the Philips' tube is directly heated and needs a separate circuit ground other than the chassis if it is to be used for both a.c. and d.c. operation **in a car.** The parallel or push-pull doubler p.a. runs at approximately 24 Ma. plate and 8-10 Ma. screen current, representing 9.6 watts final plate input with plate and screen modulation.

A choke-input filter and a bleeder resistance would help on c.w. A special section-wound final r.f.c. is preferable to the usual 2.5 mH.

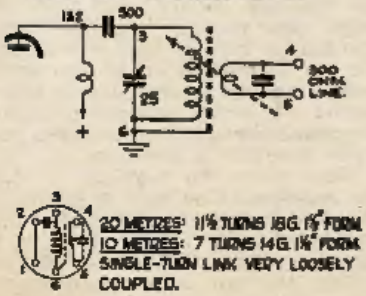
P.A. PLATE TUNING & ANT. COUPLING.
SERIES TUNING.



OPERATION

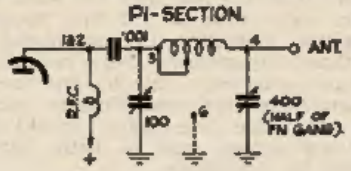
On the 144 Mc. band the QQCO4/15 is used as a plate modulated oscillator. Whereas a plug-in/clip-on tank could be used, a separately wired socket with v.h.f. heater chokes is a simpler alternative, depending on your mechanical ingenuity. For **six metres,** we triple and double an 8 Mc. xtal with the final series tuned.

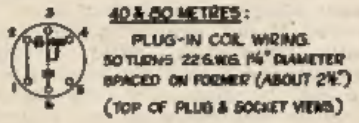
P.A. PLATE TUNING & ANT. COUPLING.
SHUNT FEED PARALLEL TUNING.



Ten and Twenty Metres: Parallel tuning is used with a 1 turn Faraday shield pick-up link loosely coupled for 300 ohm line output. On 20 metres, a 0.0003 uF. fixed condenser is wired across the link to be in parallel with the F.N. two-gang to make up the required capacity.

P.A. PLATE TUNING & ANT. COUPLING.
PI-SECTION.





Forty and eighty metre operation is with a long wire (random length—i.e. 5JK type) antenna. The final tank and output is switched to become a Collins Tuner when plugging in the appropriate coil. Multiple taps enable it to be used on 40 and 80 with any length of wire. The final has both sections operating in parallel (by means of the straight-through grid plug) when operating at crystal frequency.

A final tank condenser of 25 pF. gives the correct L/C ratio for a Q of 12 with the high impedance of the final, up to 40 metres, allowing for valve electrode and stray circuit capacities. A 0.0001 uF. condenser is required if operating up to 80 metres.

Keying and metering can be of your own choice. The addition of a (super) regenerative detector feeding into the audio section could turn the stand-by into a transceiver (with suitable switching and using the modulation transformer's voice coil output). Switching the high tension to the home station receiver would also permit emergency battery operation.

It is better to plan your layout many times and only build it once.

EFFECTS OF ELECTRICITY ON THE HUMAN BODY

(Continued from Page 3)

the prompt application of artificial respiration to shock victims may be ascribed to the temporary nature of this paralysis. If nature is given the opportunity, it often will repair the damage and again permit the signal from the brain to reach the organ in question.

Ventricular Fibrillation results when a small current passes through the heart and disturbs its normal co-ordinated rhythm, as explained in the foregoing. The human heart does not recover spontaneously from ventricular fibrillation. While the heart is in this condition there is no circulation, and death will ensue.

Ventricular fibrillation may be arrested by the passage of a 60-cycle current of the order of one to two amperes through the heart. This value of current is sufficient to bring the muscles of the heart to rest and hold that organ in diastole. Then when the circuit is broken the heart usually will resume its normal operating rhythm. The feasibility of this method of recovering the heart by an electric counter shock was demonstrated by using experimental animals. It has been applied to man and two cases of successful recovery of the fibrillating heart are reported.

Permanent Effects. Permanent injuries from contact with electric circuits fortunately are extremely rare. Perwitzschky reports 23 cases of auditory and vestibular injuries that appeared either immediately or from one or two years after the shock. It is peculiar that the damage was not related in any way either to the severity of the shock or to the path of the current through the body. There are cases on record where the ear formed one of the circuit contacts yet no permanent after-effects resulted.

Death from electric shock may result from a number of causes or from a combination of two or more of them. In general, low voltages kill through the mechanism of ventricular fibrillation and high voltages either through the destruction or inhibition of the nerve centres; asphyxia being the immediate cause of death.

A YOUNG MAN'S GAME?

So radio is a young man's game? Don't you believe it! As a profession, maybe. But as a hobby—well, you're never too young or too old.

Take "Skipper" Schofield, VK6WS for example. VK6WS makes no claim to be the "oldest" Ham in VK6 from the point of greatest number of years spent pursuing the hobby, but he does claim to be the oldest in the true sense. Not many men approaching sixty set to and study for their A.O.P.C., but "Skipper" did—and got his ticket in the early 1930's. Now, at 78, VK6WS is still active, mostly on 7 Mc. these days, but hoping for a return of good conditions to twenty metres, his favourite pre-war stamping ground.

Forty metre activity results from a Type 3 Mk. II., but the main rig is v.f.o. controlled, finishing with a T50 in the final. Operation can be had on 80, 40, 20 and 10. There's a "Commander" communications receiver to bring the signals in and a dual 20 and 10 metre beam, power-driven, to push "Skipper's" signal out. The original rack-and-panel frame, which VK6WS built, is still in use although, as "Skipper" himself says, "the innards have been altered many times from the old tri-tet and a P.M.G. type carbon mike."

A qualified accountant and a Justice of the Peace, "Skipper" is now living in retirement after thirty years in business as a hotel and business broker. His chief interests aside from Ham Radio are gardening, photography—and cigars! A question he'd very much like answered is "has any other Division a member with as many (or more) milestones to his credit?" Any takers?—VK6WZ.

Radio Control of Model Aircraft

BY C. H. CASTLE,* VK5KL

At first sight the control of Models is not Ham Radio as we know it, but a hobby that the Amateur is closely allied to because of the transmitting and receiving equipment used and the knowledge that the Amateur can give to overcoming the many difficulties that can arise in the operation of the radio gear. Much credit can be given to our fellow Australian, the late Ross Hull, who, whilst on the staff of "QST" over a period of years, made a close study of radio controlled Models and his development of a simple actuator and escapement is still used today in simple types of control and is most reliable.

Purpose of Control started with the introduction of Petrol engine powered Models because of their range and necessity to bring the Model back instead of having to chase it for miles.

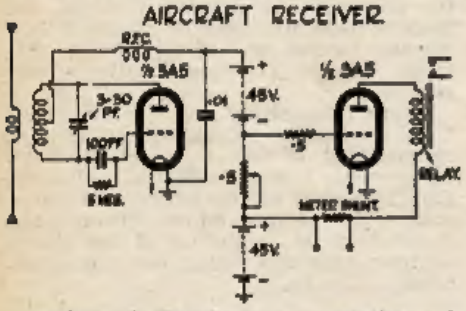
Weight.—Apart from special designing of the Model, it is necessary to carefully consider the weight that has to be carried (batteries, receiver, relays, etc.) and the distribution of the weight so as not to upset the equilibrium and centre of gravity for stable flying.

Number of Controls in Order of Preference:—

(1) Rudder—right or left.
(2) Elevators—up or down.
(3) Motor speed.
(4) Shut off motor.

The simplest is rudder control only and is best to start on before graduating to the more complex systems.

AIRCRAFT RECEIVER.



Action of Receiver on reception of signal is to energise a sensitive relay which in turn closes the battery circuit to operate a second relay that is part of the actuator and escapement that operates the rudder. Early receivers used type 30 and 1F4 tubes, and mainly used about three valves to get enough change in plate current to operate the relay. In 1938 a gas triode (RK62) was made and its present day equivalent is the XF1G. With the introduction of high ohmage sensitive relays, the receiver was reduced to one tube. Other hard valves such as the 3V4 and 3A5 are all used successfully.

Circuit used is the super-regenerative detector because of its sensitivity. In practice the combination of plate volts grid condenser and resistor, plus aerial loading, are used to adjust the plate current of the tube until it will hold in the tongue of the relay. On receiving a signal, the plate current will drop and thus release the relay tongue and so close contacts that will operate the escapement relay. The gas triode tubes give the best variation in plate current from 1.5 to 0.5 Ma. and the hard tubes from say 5 down to 3.5 Ma. according to signal strength. It was found that all these adjustments were very finicky and prone to body capacity and unstable in operation from one time to another; at one time the relay would have positive action and a little later it would be unreliable.

A friend had asked the writer to assist with the building of a radio controlled Model, supplying the necessary radio knowledge. After investigating several others' gear and reading as much as can be found on the subject, a receiver was made up and experiments started with the results that after a few months had passed we still did not have a satisfactory receiver due to the faults mentioned beforehand.

The main trouble seemed to be that one could not get an adjustment whereby the receiver was stable enough for operation for hours on end, nor was it stable enough in plate current variation to work the relay positively. In field tests sensitivity dropped away fairly quickly after the first few hundred yards.

It was decided to postpone launching the aircraft until such times as a better receiver was devised and to this end a few months was spent on research, testing all the tubes and circuits that has been used successfully and some that had not. The relay being used was the squelsh relay from a 522 and although it will operate on 0.5 Ma. change in plate current, it seemed to hold in best when a static plate current of about 3 Ma. was used. At that current the XF1G was out and a hard tube used.

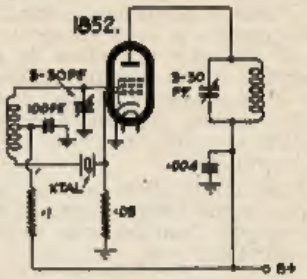
What was wanted was one tube as the super-regen. receiver and a second biased to cut-off until on reception of a signal, then to draw enough current to operate the relay with positive action. After a further few months of trying all sorts of schemes, the receiver to be described was eventually sorted out and proved most satisfactory, both in field tests and in actual flying. It is very sensitive and positive even after six flights and landings without retuning and works even after weeks of inactivity.

RECEIVER CIRCUIT

Looking at the circuit it will be seen that a 3A5 twin triode tube is used, one half being the normal super-regen. receiver and the second half the biased section to work the relay. The split h.t. battery is a bit unorthodox. Plate current drawn by the super-regen. section through the potentiometer in the centre of the battery produces a negative voltage across the resistor and so biases the second half of the 3A5 to cut-off. (This can be adjusted by the potentiometer to suit the amount of voltage that is applied to the plate of the relay tube.)

On receipt of a signal the plate current of the super-regen. receiver drops and although it is minutely, the voltage variation across the potentiometer is great enough to overcome the negative bias on the second half of the 3A5 and becomes a positive voltage. The tube immediately conducts and draws plate current, limited by the amount of positive voltage applied to the plate. This current passing through the relay actuates the tongue of the relay and closes the contacts. On no signal, it releases and the tube returns to rest, biased and drawing no current. This is also a saving on the batteries.

The resistor in series with the grid of the relay tube limits the current drawn by the grid of the tube if at any time the receiver section should fail to draw current and so sustain the bias on the second half. The receiving section, now not having to also draw enough current to operate the relay, does not have to be loaded up and so consequently as a super-regen. receiver, is much more sensitive.



TRANSMITTER.

In practice, on the frequency band 40.66 to 40.7 Mc., the Aircraft is taken as far away as possible from the transmitting point and tuned up with no antenna on the transmitter by use of earphones connected via a fixed condenser from earth to the plate of the receiver, and with transmitter key down, tuned on frequency for minimum hiss of the super-regen.

The potentiometer is then adjusted by the aid of clipping in a meter in the plate circuit of the relay tube and adjusting for nil plate current. (In practice it is found best to adjust at a idling current of about 0.25 Ma.) On key down of the transmitter, the current will rise to around 3 Ma. and operate the relay.

When the antenna is put on the transmitter, it extends the range and no trouble has been found of controlling the Model up to two and three miles on the ground. The receiver antenna is a quarter-wave centre fed fixed along the trailing edge of the wing.

LOCATION OF COMPONENTS

Batteries in the aircraft are installed immediately behind the engine only in the fuselage section and are of the small type used in portable receivers. The lighter type as used in hearing aids are not recommended as the saving in weight against useful life is not warranted. A small four-pin plug is used for connection as this simplifies matters when renewal is necessary.

Next down the fusalage is mounted the receiver. Contrary to some, this is mounted firmly to the body and not suspended with rubber as it is found better to take any shocks of crashes.

Near the tail is the escapement and relay and also a flat 4½ volt battery for

* 29 Turnbull Road, Enfield, South Aus.

operating the relay and the rubber motor that is associated with the escapement. The escapement is of the simple sequence type and operates neutral left, neutral right, neutral. There is no need to describe this as anyone interested will have the necessary knowledge or can obtain same from certain publications dealing with them.

TRANSMITTER

Of the two frequencies allotted for radio control of Models in Australia, namely, 26.957 to 27.282 Mc. and 40.66 to 40.7 Mc., the higher frequency was chosen as there it was more practical to use a half-wave antenna on the transmitter and also the wing span of the Aircraft would allow a quarter-wave aerial to be used.

The failure of some types of gear seen, seemed to be in the stability of the transmitters and so from the first, crystal controlled was aimed at and overcome in one tube by the use of the harmonic oscillator circuit. The crystal frequency is 6780 Kc. and the output frequency 40.68 Mc. A lot of the success of control is attributed to having stability in the transmitter.

ANTENNA

Used in all tests is a simple folded dipole made of 300 ohm ribbon, the flat top being 11 ft. 6 in. long.

Conclusion. — Although this article is not explicit in all minor details and does not include construction of the actual Aircraft, it is hoped that it will give those interested in this very fascinating hobby, that combines radio, enough knowledge to help overcome some of the very obstacles that may be marring their attempts to achieve successful control of their particular Model, be it Aircraft or Ship.

All enquiries will be answered by the author and help given where possible.

RADIOTRON 6BV7

Double Diode Power Output Pentode—

The new Radiotron noval 6BV7 miniature valve has been designed by the engineers of Amalgamated Wireless Valve Company especially to meet the needs of manufacturers of compact, low-cost receivers with high performance. This new valve is mounted on the standard nine-pin miniature base and contains in one envelope, two diodes and a high-slope power output pentode with a common cathode.

With a seated height of 2¾ inches and a maximum diameter of ¾ inch, the 6BV7 makes possible the design of ultra-small superheterodyne receivers using only three valves: 6AE8 (or the 6BE6), 6BV7, 6X4.

The pentode section mutual conductance of 10,000 micromhos allows the receiver engineer to employ audio tone correction circuits without seriously effecting the overall sensitivity.

The 6BV7 is capable of a 2 watt output under low plate voltage conditions, thus enabling power supply economies to be made.

List price of the Radiotron 6BV7 will be 19/6.

GENERAL DATA

Electrical:

Heater, for unipotential Cathode:	
Voltage (a.c. or d.c.)	6.3 volts
Current	0.8 amp.
Direct Interelectrode Capacitances (with no external shield):	
Pentode Unit: Grid to Plate	0.5 pF. max.
Input	11.5 pF.
Output	9.5 pF.
Diode (pin 1)—Diode (pin 6)	0.01 pF. max.
Diode (pin 1)—Pentode Plate	0.7 pF. max.
Diode (pin 6)—Pentode Plate	0.3 pF. max.
Diode (pin 1)—Pentode Grid	0.1 pF. max.
Diode (pin 6)—Pentode Grid	0.1 pF. max.

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-5/8"
Maximum Seated Length	2-3/8"
Length, Base Seat to Bulb Top (excluding tip)	2" plus or minus 3/32"
Maximum Diameter	7/8"
Bulb	T-6-½
Base	Small Button Noval 9-Pin

Base connections for bottom view—

Pin 1—Diode Plate.
Pin 2—Pentode Plate.
Pin 3—Pentode Grid No. 2.
Pin 4—Heater.
Pin 5—Heater.
Pin 6—Diode Plate.
Pin 7—Cathode and Pentode Grid No. 3.
Pin 8—Pentode Grid No. 1.
Pin 9—Cathode and Pentode Grid No. 3.

PENTODE UNIT

A.F. Power Amplifier—Class A

Maximum Ratings, Design-Centre Values:	
Plate Voltage	250 max. volts
Grid No. 2 Voltage	250 max. volts
Plate Dissipation	10 max. watts
Grid No. 2 Dissipation	2 max. watts
Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode	90 max. volts
Heater positive with respect to cathode	90 max. volts

Typical Operation and Characteristics:		
Plate Voltage	180	250 volts
Grid No. 2 (Screen) Voltage	180	250 volts
Grid No. 1 (Control Grid) Voltage	—4	—5 volts
Peak A.F. Grid No. 1 Volt.	4	5 volts
Zero-Sig. Plate Current	20	36 Ma.
Zero-Sig. Grid No. 2 Cur'nt	3.5	6.0 Ma.
Plate Resistance (approx.)	130000	100000 ohms
Transconductance	8000	10000 umhos
Load Resistance	7000	7000 ohms
Max. Sig. Total Harmonic Distortion	10	10 %
Max. Sig. Power Output	2	4 watts

Maximum Circuit Values:

(for maximum rated conditions)

Grid No. 1 Circuit Resistance:	
For fixed bias	0.1 megohm
For cathode bias	0.5 megohm
For back bias	see under Application

DIODE UNITS

Maximum Ratings, Design-Centre Values:
Plate Current (for each diode) ... 1.0 max. Ma.

Diode Considerations:

The two diode units are placed on opposite sides of, and parallel to the cathode, the sleeve of which is common also to the pentode unit.

The minimum diode current per plate with an applied d.c. voltage of 10 volts is 0.8 Ma.

APPLICATION

The Radiotron type 6BV7 is a nine-pin miniature duo-diode output pentode with a transconductance of 10,000 micromhos and a power output of 4 watts for 10% total harmonic distortion under recommended 250 volt operating conditions. The valve was designed primarily for use in low cost four valve receivers in which good performance is required with reduced plate and screen voltages and low cathode current. In this application with plate, screen and control grid voltages of 180, 180 and —4 volts respectively, Radiotron 6BV7 will deliver 2 watts output for 10% distortion with a plate current of only 20 Ma.

Diodes

The location of the diodes in the output valve allows a very convenient layout of the conventional 4 valve straight or reflexed receiver and enables higher i.f. gain to be obtained without excessive regeneration, or without neutralising, than is possible when the diodes are located in the r.f. amplifier valve.

In receivers with an a.f. amplifier between the detector diode and the grid of the pentode section, it is recommended that the diode connected to pin 6 be used for detection as this diode has the lower capacitance to pentode plate. In other types of receivers either diode may be used for detection.

Pentode

Grid Resistor. The maximum permissible value of grid resistor for Radiotron 6BV7 under maximum dissipation conditions is 0.5 megohm for cathode bias operation and 0.1 megohm for fixed bias operation. In conventional back-biased receivers in which the pentode is operated at maximum ratings, the grid resistor should be reduced from 0.5 megohm in the ratio that the cathode current of the 6BV7 bears to the total current drawn by the receiver.

Larger values of grid leak may be used when the dissipation of the valve is reduced. For example, under the 180 volt conditions quoted above in a back-biased receiver in which at least half of the total B supply current is drawn by the output valve, the maximum permissible value of grid resistor is 1 megohm.

Grid Stopper. The high transconductance of Radiotron 6BV7 provides good power sensitivity and under 250 volt operating conditions an input of 0.25 volt r.m.s. gives 50 mW. output. Under 180 volt conditions an input of only 2.6 volts r.m.s. gives full rated output. In addition to its usefulness from the point of view of pure sensitivity, the high transconductance of Radiotron 6BV7 makes possible the use of a larger degree of negative feedback than would otherwise be possible. Even in the case of a four valve straight receiver a worthwhile degree of negative feedback can be applied to the output stage while still maintaining good overall sensitivity.

Because of the high transconductance of Radiotron 6BV7 a grid stopper should always be used and a value of 5,000 ohms is recommended.

In four-valve straight receivers a large audio voltage appears on the diode and with the volume control turned to minimum the amount of playthrough is proportional to the impedance between control grid and ground. For this reason, the grid stopper should not be too large—5,000 ohms is as effective as 50,000 ohms in suppressing parasitic oscillation—nor should the grid coupling capacitor be too small. Under these conditions playthrough will be very low.

Use with Low-Level Pick-Ups. When Radiotron 6BV7 is used as part of a high-gain pick-up amplifier, such as is required with some low-level pick-ups, it is desirable to arrange the radio-gramophone switching to remove the detection diode from the circuit in the high-gain pick-up position in order to remove the possibility of feedback through the diode circuit. As such switching is incorporated in most receivers to prevent interference with recorded items from radio programmes, this arrangement does not normally involve additional cost.

Ventilation. The envelope of Radiotron 6BV7 becomes very hot in operation, and free circulation of air around the valve is necessary.

FEDERAL EXECUTIVE PROCEEDINGS

This is a new column to be featured monthly bringing to the country members and metropolitan members, who are unable to attend the regular monthly meeting of the Division, a brief summary of resolutions arising from meetings of the Federal Executive. By this means the more isolated members of the Institute will be kept in touch with what is going on.

The Federal Executive meets twice in each month—sometimes three times—to discuss and resolve the directives and problems of each Federal Council.

A copy of the minutes of all meetings is forwarded to each Division through the Federal Councillor, who is the liaison officer between his Divisional Council and the Federal Executive. Any member in a Division who desires more detailed information on any matter appearing in this column is at liberty to address the Council of his Division.

A member may desire to have a matter of a Federal nature discussed and resolved by Federal Executive. **He does not write direct to the Executive!** He writes to his Divisional Council first; the Council then decides if the matter is Federal, or whether it is domestic. If the matter is considered a domestic one action is taken by the Council; if the matter is on a Federal level it is forwarded **by the Federal Councillor** to the Federal Executive. The resolution of the matter by the Federal Council is detailed back to the Divisional Council who in turn advises the member. The machinery of the Federal organisation works smoothly. The members should use it to achieve their requirements.

Resume of Minutes of Meetings of the Federal Executive held during July, 1952

Ratification of Convention Minutes.—The Secretary reported that all Divisions had ratified the minutes of the 1952 Annual Federal Convention.

After discussion, it was agreed that the Secretary would implement action on all items as soon as possible.

Visit of President Elpido Quirino, President of the Philippines.—It was agreed that it would be an appropriate time to ask President Elpido Quirino why the DU Amateurs had been forbidden to contact other than Amateurs of the U.S.A. since the Philippines gained its independence after World War II.

Office of Assistant Federal Secretary.—It was agreed to offer the position to John Rice-Oxley, VK3AKO, who had signified his willingness to undertake the duties involved.

Knowledge of Federal Affairs.—Discussion took place on the lack of knowledge of what was happening in Institute affairs at a Federal level—particularly on the part of country members who were unable to attend monthly meetings of the Division.

It was resolved that a resume of Federal Executive meetings should be included in the magazine under the heading, "Federal Executive Proceedings," similar to the method adopted by contemporary overseas magazines.

144 Mc. Transmissions from VK4.—The Secretary submitted correspondence from the Queensland Division reference 144 Mc. transmission on the air between 7 p.m. and 7.30 p.m. every Sunday night. It was agreed to ask all Divisions to ask their v.h.f. members to listen out, and if heard, report direct to VK4.

Discussion with the Postmaster-General's Department.—After consideration of a report of discussions between members of the Federal Executive and Officers of the Wireless Branch of the P.M.G's. Department pursuant with directives from Federal Council arising from discussions on appropriate agenda items at the 1952 Convention, it was agreed that the Federal Executive should press for finality of the appropriate matters without delay.

AMATEUR COMMUNICATIONS THROUGHOUT JUNE-AUGUST N.S.W. FLOODS

During June many N.S.W. inland towns experienced their worst floods in history. Although Amateur Radio Stations during the emergency were not called upon to handle any great amount of traffic, stations were always available when called upon. They spent many hundreds of hours listening and operating and reflected upon the potential value of the service in emergency.

Many Amateurs in various areas assisted in the operation, 2WH, 2AMV, 2WT, 2ANF, 2ADT, 2AWY, 2SN, 2ALX, 2TC, 2JV, 2ACT, 2II and 2BQ all rendered assistance.

It was another credit mark recorded for Amateur Radio and all stations participating.

The authorities—Army and P.M.G.—gave Amateur Stations full support and prompt co-operation.

Late in July and early in August, N.S.W. Amateurs were again engaged in emergency working. At the end of July when the Macquarie River floods reached serious proportions at Bathurst, the 144 Mc. band was used for an emergency call to Sydney. At the time, the telephone link to Sydney was out and the Bathurst Police requested Trevor 2NS to contact Sydney. They required an urgent message to be relayed calling for the immediate dispatch of Army "Ducks" to the area for rescue work. A number of people were isolated and lives were threatened.

A CQ Sydney Emergency, on 144 Mc. at 10 p.m., resulted in a reply from Charlie 2NP answering, who passed the message to the Sydney Police. The link was kept open until 1 a.m., when all traffic was cleared.

It was the first important work on the v.h.f's. in emergency and the distance covered—100 miles—makes it even more interesting.

Further emergency work was performed on 6th and 7th August, when the Hunter Branch Net swung quickly into operation, after a cyclonic disturbance caused river levels on the Hunter and its tributaries to rise swiftly.

Stations active in the Net were: 2ANU, 2VU, 2JZ, 2DG, 2XQ, 2TY, 2AKP, 2ADT, and 2AHA.

During the last three years, the Hunter Branch Emergency Net has been active on many occasions during flooding of the Hunter. The Net, by their work, have clearly shown the value of Amateur Radio in such emergencies.

AMATEUR CALL SIGNS

FOR MONTH OF MAY, 1952

ADDITIONS

VK—

New South Wales

2EG—W. J Storer, 17 Brook St., Murwellbrook.
2AKC—J K. Cotton, Camden St., Balgownie.
2APZ—Rev R. L. Kerdel, St. Peter's Rectory, 10 Church St., Leeton.
2AQK—D. Hodgins, Mobile aboard S.S. "Beltana" Postal. "Selroydon," Ross St., Glenbrook.
2ART—D. Hodgins, "Selroydon," Ross St., Glenbrook.
2ATE—P. F Christie, 1 Marcella St., Kingsgrove.

Victoria

3AM A. M. Forecast, Mountain Highway, The Basin.
3KO—M. A. O'Keefe, 46 O'Keefe St., Preston.

Queensland

4MU—G. G. J Matheson, Knight St., Red Hill, Kingaroy

South Australia

5AV—A. E. V Molineux, 39 Coorara Ave., Sth. Payneham,
5OG—L. E. Lawton, 81 Fortisgreen Ave., Pennington.
5SU—F. M. Gray, 53 Ormond Gr., Adelaide.
5WT—J. W. Trevor, Portable in Central and Southern Districts of S.A.; Postal: Myal Ave., Murray Bridge.

Tasmania

7DZ—D. H. Watkins, 27 Hope St., Newtown, Hobart.

ALTERATIONS

VK—

New South Wales

2KW—30 Harris Street, Sans Souci
2NB—206 "Cheverells," 2 Elizabeth Bay Road, Elizabeth Bay.
2RY—Lot 26, Charles Street, Herne Bay.
2WP—95 Lambton Road, Charlestown.
2XK—285 President Avenue, Miranda.
2ANR—Flat 1, Howe Cres., Ainslie, Canberra.
2APO—16 Harper Street, Merrylands.

Victoria

3BI—C/o. P O. Learmonth.
3FQ—28 Potter Street, Dandenong.
3JU—1040 Sydney Road, Merlynstone.
3PC—18 Cushing Avenue, Bentleigh.
3QA—Fairhills Parade, Glen Waverley.
3QK—415 St. Kilda Street, Elwood.
3QL—Morgan Street, Rosebud.
3TY—9 Raglan Street, Sale.
3VK—448 Glenhuntly Road, South Caulfield.
3YK—34 Malabar Road, Blackburn
3ZZ—Orchard Crescent, Box Hill North.
3AAP—14 Carlyle Street, Maidstone.
3ABO—Lot 7, Taylor Street, Clayton.
3AFH—9 Faurus Street, North Balwyn.
3AGK—16 Barnard Grove, North Kew, E.8.
3AJL—22 Royal Crescent, Camberwell, E.8.
3AKC—6 Grant Street, Colac.
3AMG—52 Orrong Road, Armadale.
3AMZ—52 Hoddle Street, Elsternwick.
3ATN—Campbell Street, Birchip.

Queensland

4GK—44 Henderson Street, Bulimba, Brisbane.
4SG—74 Herries Street, Toowoomba.
4WH—33 Mindham St., Mysterton Estate, Townsville.

South Australia

5GW—29 Grassmere Road, Prospect.
5HE—National Bank, John Street, Salisbury.
5LM—114 Anzac Highway, Helmsdale.
5MS Acacia Street, Mount Gambier
5SL—34 Albert Street, Semaphore.
5TL—Ral Ral Avenue, Renmark.

Western Australia

6BR—1 Mark Street, Geraldton.
6KE—Married Quarters R.A.A.F Station, Pearce.

Tasmania

7GR—73 Nelson Road, Sandy Bay, Hobart.
7MG—Opossum Bay.
7RB—Block 9, Prospect Street, Launceston.

DELETIONS

N.S.W.: VKs 2FA, 2AOT, 2AOW.
Vic.: VKs 3AC 3UB.
Qld. VKs 4GE, 4MO.
W.A.: VKs 6KV, 6XZ.
Tas. VK7OK (now operating under VK3KO).
Ter.: VKs 1BS (now operating under VK2EG), 1DC

FOR MONTH OF JUNE, 1952

ADDITIONS

VK—

New South Wales

2SZ—P T Filmer, 84 Cabramatta Rd., Mosman.
2ACW—L. R. Hawkins, 624 Olive St., Albury.
2AGP—G. T Ralph, 85 Kurraba Rd., Neutral Bay
2AKH—G. F. E. Knox (Lt/Cmdr), 16 Brentwood Ave, Turramurra.
2APN—D. G. Littlejohn, 14 Chamberlain Ave., Rose Bay, Sydney.
2AVK—S. F G. Williams, "Elsinore," Edwin Ave., North Katoomba.

Victoria

3HQ—Mrs. M. L. Williamson, 17 McLean Ave., Bentleigh.
3KD—R. S. Chambers, 328 Pascoe Vale Rd., South Essendon.
3OR—R. W. Davey, Point Avenue, Beaumaris.
3PO—D. A. Miller, 21 Sweeney St., Ballarat.
3AAS—Army Apprentices' School Amateur Radio Club, Army Apprentices' School, Balcombe.
3AHF—H. L. Fogg, C/o. Australia and New Zealand Bank Ltd., Benalla.
3AJS—J. S. Duncan, 5 Glyndon Ave., Brighton.
3AKO—J. R. Oxley, 38 Victoria Ave., Canterbury, E.7.
3ANO—R. A. Jones, 9 Norge St., Sunshine.
3ANS—A. N. Sinnbeck, 182 Buckley St., Footscray.
3APL—J. W. London, 89 High St., Glen Iris.
3AVB—V. B. Aldrich, 22 Somerville Rd., Yarraville.

Queensland

4HJ—J. H. Chesterfield, Russell St., Cleveland.
4OX—H. Cox, Flat 1, 11 King St., Nth. Mackay.

South Australia

5TA—R. W. Tate, 21 Bertie St., W. Hindmarsh.
5VK—W. P Kempster, Smithfield Hostel, Smithfield.
5WZ—F. G. Ancar, C/o. R.A.A.F. Station, Mallala.

Western Australia

6AU—L. A. E. G. Norman, 16 Agett Rd., Claremont, Postal Box N1058, G.P.O., Perth.
6FE—F. M. Eddy, C/o. Radio 6AM, Northam.

Tasmania

7DR—D. J. Robinson, Penguin Rd., Ulverstone.
7RT—R. T. Calvert, 310 Park St., Hobart.
7SF—S. F. Medford, 4 Cooper St., South Burnie.

Territories

9DT—D. G. Taylor, Samarai, T.N.G.

ALTERATIONS

VK—

New South Wales

2BG—343 Kissing Point Road, Dundas, Sydney.
2ED—36 Lavender Avenue, Punchbowl.
2GO—32 Blake Street, Rose Bay.
2JB—Reid Street, Seaforth, Sydney.
2LU—111 Hood Street, Yagoona.
2VM—35 Weeroona Avenue, Narrabeen North.
2WZ—74 Landsdowne Parade, Oatley.
2YT—31 Avenel Street, Canley Vale.
2ABM—Lot 15, Northcote Road, Bankstown.
2ADO—63 Campbell Parade, Manly Vale.
2AGS—Fishbourne Road, North Manly.
2AHI—Albert Street, Casino.

Victoria

3JT—Eldorado Hotel, Leveson St., North Melbourne, N.1.
3JZ—7 Foam Street, Parkdale, S.11.
3OY—85 Warrigal Rd., Oakleigh, S.E.12 (VK3OY recently changed from VK3HQ).
3RX—22a Mercer Road, Armadale.
3US—15 Hassett Street, Leongatha.
3VL—15 Hassett Street, Leongatha.
3ZJ—26a Queens Ave., Caulfield, S.E.9 (VK3ZJ recently changed from VK3AZJ)
3ZM—126 Bellair Street, Kensington, W 1.
3ABX—3 Fairway Avenue, Mount Beauty.
3AGH—Nolan Street, Kilmore East.

Queensland

4JC—5 Stoneleigh Street, Toowoomba.

South Australia

5OP—18 Price Avenue, Lower Mitcham.
5WJ D.C.A. Parafield.

Western Australia

6AT—40 Broadway, Bassendean.
6BF—93 Toorak Road, Rivervale.

Territories

9BI—Lae, T.N.G.

DELETIONS

N.S.W.: VKs 2TI, 2AAD (now operating under VK2AJS), 2AHT, 2AOL (now operating under VK2APL), 2AOP, 2AOX (now operating under VK4DX).

Vic.: VKs 3NR, 3OH, 3RG, 3ZJ, 3AAC, 3AZJ (now operating under 3ZJ).

Qld.: VKs 4HP, 4NF.

S.A.: VKs 5HF (now operating under VK3AHF), 5GD (now operating under VK3OR), 5LO (now operating under VK3PO), 5MB.

Ter.: VKs 9PF (now operating under VK2SZ), 1WO.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

Television Questions and Answers

Questions on television, submitted to VK3ADA, after being answered by post, will be anonymously published and again answered here, as space permits, to benefit other readers.

Q.—What is meant by "Spot-Wobble?"

A.—This is a system incorporated in some British 405-line receivers, to "make the scanning lines invisible." As the spot of light traces out each line on the screen, it is made to rapidly oscillate vertically, thereby broadening each line just sufficiently to fill the spaces between them so that the latter are no longer visible.

Although this system does not improve the definition, it has the psychological effect of making the picture appear clearer, through the absence of the familiar "pencil lines" across it.

* * * *

Q.—I've read that if Australia copied the American system of 60 fields per second, instead of 50, we could have a brighter picture. Why so?

A.—Actually, by adjusting the brilliance and contrast controls, you can make the picture as bright as you please, Old Man—so long as you don't mind flicker! You see, it's been proved that the brighter the picture, the more noticeable becomes the flicker. For instance, in a modern cinema, the projector's shutter frequency (corresponding to our field frequency) is only 48 exposures per second, yet no flicker is apparent, simply because the picture on the screen is so dim, that it can only be seen in a dark theatre.

If the picture were made brilliant enough to be viewed in a brightly-lit living room, however, the flicker would become very noticeable and could be eliminated only by increasing the repetition, or "field" frequency to around the 60 mark, so your quotation would be quite correct, if the words "without flicker" were suffixed.

, In television, however, if the field rate was increased from 50 to 60, the number of lines per picture would have to be reduced to keep the signal's bandwidth within its limits and the consequent sacrifice in picture detail is hardly justified.

A 50 field/sec. picture can be sufficiently reduced in brilliance to eliminate flicker, and still remain quite bright enough to be viewed under average domestic lighting conditions; screen phosphors have also been developed with sufficient persistence to eliminate flicker in an even brighter picture, without adversely affecting the latter.

In any case, the darker the viewing room, the better will be the picture, even with a 60 field/sec. system, because of the improved light/shade contrast. The reduced brilliance is probably better for the eyesight, too.

FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

NEW SOUTH WALES

The August meeting of the V.h.f. Section was held at Science House and took the form of a "gear" night. An excellent display of gear was shown with many excellently built crystal controlled converters, crystal control Tx's, and grid dip oscillators. It says much for the progressive attitude of those interested in v.h.f.

A Scramble was held on Sunday, 3rd August, on 6 metres which was a huge success with the boys in the North showing up to increase the total. The event was won jointly by 2ANF and 2VW with a total of 17 contacts out of a possible 22.

Main interest at the moment is the forthcoming 144 Mc. Field Day (week-end) during October when the Gladesville Radio Club and the W.I.A. are combining to make the event one of spectacular interest. It is proposed that camping groups will go out and man the major mountain tops some distance from Sydney and others will man the closed mountain tops within one day's travel to and from Sydney. It is hoped by this means to really establish some long distance contacts and also, if the VK3 Division co-operates, to work through to Victoria.

VICTORIA

The next V.h.f. Group meeting is on the 17th September, 8 p.m., at the Rooms, 191 Queen Street. Visitors are welcome. Listen to 3WI for further announcements regarding meetings.

At the July meeting of the Victorian Division V.h.f. Group, Fred 3YS described his portable 6 and 2 mx Tx. This is xtal controlled with an 832 in the final, running 3 watts input and series modulated. The Tx was on view together with motor generator and three element beam.

Victorian v.h.f. enthusiasts have been preparing gear for their section of the W.I.A. stand at the forthcoming All Models Exhibition. A 50 and 144 Mc. station will be in operation to contact fixed and mobile stations, so if you hear them calling for contacts, please give them a call. Various other units of v.h.f. gear will be on display.

At the N.E. Zone Convention, held at Tatura on the 20th July, some neatly constructed v.h.f. gear was displayed by 3UI and 3APF. Of special interest were the xtal controlled converters which have been used so successfully. The N.E. Zone is to be congratulated on their early and consistent effort on v.h.f.

SOUTH AUSTRALIA

All bands still remain quiet although some have a little activity 5ME has returned from a few weeks' duty at Renmark with 5BC and reports being able to hear Nhill Aeradio on 122 Mc. almost every day, a distance of approx. 160 miles. This even in winter, so how about a little more activity chaps? It can be done if the will is there.

A recent "QST" gave a mention of the good work done by 5GL, 6BO, 5QR, on their 144 Mc. QSOs. 5AX's efforts have been rewarded and now has a very good signal in the city on 144 Mc 5GY, in town recently, was given an eye opener of v.h.f. activity. Would be a sitter from his QTH. 5MK hopes to shift into his new home shortly and will be back on the v.h.f. bands soon after. How about the gardening Ron.

WESTERN AUSTRALIA

50 Mc.—6LU has appeared with both Rx and Tx. 6JW with a vertical dipole puts out a strong sig from a QQE06/40, John is making up a 6J6 pre-amp. on this band. 6IG on phone again—nice signal 6DW and 6FE on this band also. 6HK has dropped his 834s until a new modulator is built. 6RK is back in his old shack and on the air again. 6GB not heard for some time 6BO has nil to report except a new mast being built for the 7 Mc. antenna

144 Mc.—Last month 6AG went portable and put out a marvellous signal from Greenmount. There have been quite a few in the QSOs of a Sunday evening, up to seven or eight—6JS, 6AG, 6OR, 6GM, 6RU, 6KW, 6WT, 6RK and 6BO (6GB also!). Roy 6RK has made his appearance with an 829B—fine sig too. 6HK using a QQE06/40 and a folded dipole, awaiting the new modulator Don 6HK also puts out a nice sig from his pair 6M5 triplers. 6FC has now worked first QSO on 144 over 100 miles with self. Frank puts a very good sig into Perth.

DX NOTES BY VK4QL*

It's still a matter of being around at the right time, if you want to work anything decent in the way of DX. The old attitude of "Think I'll go on and work some DX," is not fulfilled in a great percentage of those visits. No warning is given when the opening will be, and a few hours of one particular day is preceded and followed by days of quiet. I myself was a little luckier this month to hear some, but not necessarily work the good ones that appeared.

On the 10th, for example, at 2145z, the 7 Mc. band produced four continents, the prefixes being ZS, OK, W and VK, and on the 13th at 2200z, ZD4, W1, W2 and W3. On the 13th, 21 Mc. was the best I have ever heard it as far as strong DX sigs were concerned, but only W, KH6, ZL were heard. In the evening of the 16th, pratcically no Ws were coming through on 7 Mc., but XE, KZ5, J, CO and YV were there instead.

On the 20th, 14 Mc. opened to Africa for a brief period in the afternoon, ZS1, ZS3 and CR6 being worked, while VK3 worked ZD4. I did the wrong thing then, as I went to 7 Mc. to see what it was producing, whereas 2AWU watched 21 Mc., and was rewarded by a break through to Europe. 4EL found one afternoon, 0500z, he was able to work Europe on 7 Mc., and they were gone by 0600z. 3CP also got through to Europe on this band at 0645z. 4EL and others have worked Europe on 14 Mc. up to 2359z. So you see from that that things are abnormal on all bands, no set pattern being followed. The band survey shows:—

3.5 Mc.: 4QL found little in the way of DX, but towards the end of the month, ZL sigs were exceptionally strong, and VR2CO was worked. **5FL**, who when I worked him, was portable at Pine Creek, and using 10 watts, said he had worked W, VE and KG6, at dusk on this band. Nice going Ross. **7RK** heard a few Ws underneath the noise.

7 Mc.: 3CP has not found the band to his liking, and reports very little of note, other than his one break through to G on the 20th at 0645z, and one morning at the end of the month. Athol also heard HK5CR*, CO2BM*, 4X4BX* (2000z), LU4ZI, SM7AAZ*. **4XJ** can hear the Ws OK of an evening, and also landed a good one on phone in FU8AC at 2100z. **4QL** found a few interesting calls, and added a new one to bring his 7 Mc. score to 73 worked. Lists VP7ND, ZS5NM*, ZS5DE, ZS5LN*, W3PDW at 2200z, ZD4AB 2200z, **W1ARE** and W2WWP 2200z, W3TBP 2245z, XE2OK, KZ5CZ, J2GO*, CO2BM*, YV5DE*, 4X4DH, K4USA 2230z. With the exception of the Central Americans, most were heard as late as 2200z, which makes 7 Mc. a daylight band. **7RK** not doing so well, Ray only hearing the usual run of N. Americans.

14 Mc.: 3CX said that LB2XD, ZS7D, VR7AB, FB8BE, ZA3KAA, LZ1KAB, ZS2MI, ZD4AB, FL8MY have been heard or worked by the VK3 boys. Some of these in the evenings, which is in contrast to this QTH where nights are useless. **4XJ**, not so active, lists J*, KB6AX*, YV5AZ, KR6IN*; Les finding Ws OK most afternoons. **4QL** lists 4W1MY, HP1LA*, HP1BR, EA8BF 2245z, ZB2I*, ZS3K*, ZS1H*, CR6BZ*, FL8MY, TA3AA. The jackpot was hit, by my giving VS5ELA his No. 1 QSO on setting up in Brunei, and bringing the total worked to 179. Incidentally, after about the third QSO, the gang were calling him on his own freq., but not getting anywhere. **7RK** remarks that most of his listing, in normal times, he would not mention. You're not on your own in that Ray. He shows 4X4BN, 4X4RE, 4X4DK, KB6AX, KM6AX, ZC4XP, CN8ET, CN8MI, HZ1MY, ON4RM*, OZ8F, EA3CY, FI8AB, CR9AF, VR3C, FB8ZZ* 0020 and 0115z, FB8BB, ZS2MI. Ray wore his fingers down after the last two, and said the VK5 gang fastened on to ZS2MI on 19th. TA3AA, YS1O, and KV4BB complete the list. Also says LZ1MY, LX1DC, ZA3KAA are known to be active.

21 Mc.: As well as 2AWU getting through to the Europeans, think there were others who made it, but calls are unknown. **2AWU** lists YU1AD*, G6GN*, G6HL. Walter is interested if his QSO is the first legit QSO VK/Europe. **4XJ** found KH6 only. **4QL** KH6*, W0*, W2, W4 and W6. **7RK** nothing further than ZL. At the present time, this band is good up here for VK2 and VK3.

28 Mc.: This band seems to be at the all time low and most hear nothing to work.

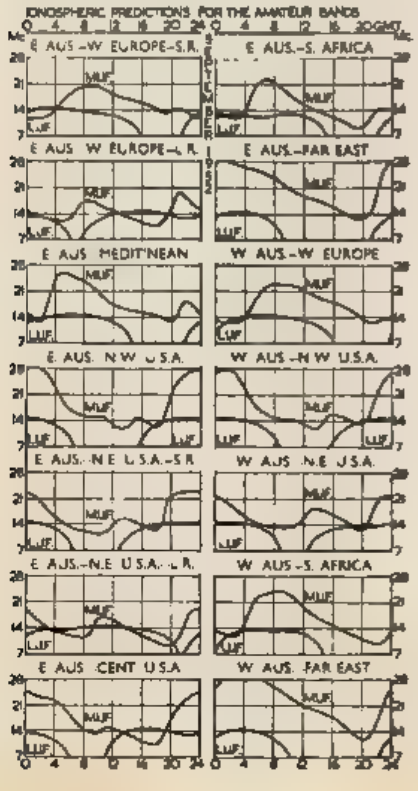
The QSL situation is like the bands, not much doing. 3CX received GD2FRV, VQ1RF, FQ8AC, TF5TP, YI3EFE, VQ8AF, ST2GL. 4XJ: YU1BK, VP6SD, KC6DX, KH6QY/KC6, KV4AA. 4QL: 4W1AC, KV4AA 3.5 Mc., VR1A, YU1AD, CT3AN.

The "gen" section this month has very little of interest. VS6CG was unable to make the projected trip to VS5 with W0ELA. ZC2MAC is reported to be now QRT. On 1st August there was quite a big reorganisation of frequencies amongst the Commercial stations, in VK at least, and it will be interesting to see how our bands fare if International changes are taking place round the same time. 7RK offers a suggestion to those seeking morse training. Listen to ZKF, of the R.N.Z.A.F., on 3320 Kc., Saturday and Sunday from 0700-0800z. Speed starts at 10 w.p.m. and finishes at 30 w.p.m. As from 26th July, the KA prefix supersedes that used by JA stations.

Finally it is getting more difficult each month to "make ends meet" for this page, and if the DX gang can't find time to let me have the necessary to "make ends meet," I will have to consider cessation of compilation of this page. So do you help, or do we close down? It's up to you.

* Flt./Lt. F. T. Hine, No. 10 (G.R.) Squadron, R.A.A.F., Townsville, Queensland.

PREDICTION CHART FOR SEPT., 1952



DX C.C. LISTING

PHONE

Call	No.	Ctr.	Call	No.	Ctr.
VK3BZ	3	163	VK4JP	8	114
VK3EE	10	163	VK3AWW	14	112
VK4HR	13	160	VK4DO	20	108
VK3JD	1	155	VK5MS	24	109
VK6RU	2	152	VK4RW	23	104
VK4KS	9	152	VK2ADT	13	102
VK6KW	4	150	VK2AHA	16	102
VK3LN	11	141	VK3HO	25	102
VK4FJ	21	135	VK6PJ	10	102
VK3JE	7	133	VK4RT	22	101
VK4WF	18	130	VK5HG	5	100
VK6DD	6	126	VK3GQ	18	100
VK4WJ	17	123			

C.W.

Call	No.	Ctr.	Call	No.	Ctr.
VK3BZ	6	207	VK4QL	26	128
VK4HR	8	182	VK4RF	11	125
VK3FH	15	177	VK3YD	27	123
VK4EL	9	167	VK3EK	3	122
VK2EO	2	162	VK3JI	25	118
VK3CN	1	151	VK3PL	38	117
VK2GW	16	151	VK3HT	37	117
VK3CX	26	150	VK3UM	13	116
VK6SA	36	150	VK7LJ	34	114
VK4FJ	29	150	VK4DA	7	113
VK3VW	4	143	VK7LZ	17	112
VK2QL	5	143	VK4RC	13	107
VK6RU	18	141	VK3YL*	39	106
VK5RX	23	140	VK6KW	40	104
VK3KB	10	136	VK2YC	34	102
VK5FH	31	134	VK3APA	14	101
VK5BO	33	133	VK3NC	18	101
VK4DO	20	129	VK2OA	32	101
VK3JE	21	129	VK7RK	33	100
VK3XK	30	128	VK1AK2	35	100

OPEN

Call	No.	Ctr.	Call	No.	Ctr.
VK3BZ	8	220	VK3VQ	46	116
VK4HR	7	205	VK3AWW	45	115
VK3JE	12	180	VK3JA	43	114
VK6RU	6	186	VK2ADT	14	113
VK4FJ	32	173	VK4RW	52	113
VK3HG	3	171	VK3PG	47	111
VK6KW	13	171	VK3MM	49	111
VK2DI	2	170	VK4RC	21	110
VK3KX	1	167	VK3ZB	34	110
VK4EL	10	167	VK3HO	38	110
VK4KS	24	167	VK2ZC	25	108
VK4DO	15	157	VK2YL	11	106
VK3LN	29	144	VK3AWN	36	105
VK5FL	26	143	VK2VN	18	104
VK3MC	5	139	VK4UL	27	104
VK3OP	19	137	VK6PJ	44	104
VK4WF	40	137	VK6PW	50	104
VK6DD	22	136	VK2HZ	17	103
VK3HT	41	135	VK7KB	30	103
VK2ADE	28	133	VK3TI	37	103
VK9GW	48	132	VK6DX	42	103
VK2AHA	9	128	VK7RK	31	102
VK3AHM	20	125	VK4TY	35	102
VK2NS	16	123	VK5HI	51	101
VK3JI	33	119	VK3ACK	6	100
VK7LZ	23	116	VK3TG	39	100

FEDERAL, QSL, and DIVISIONAL NOTES

Federal President: G. GLOVER (VK3AG); Federal Secretary: G. M. HULL (VK3ZS); Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

President: John Moyle, VK2JU

Secretary. David H. Duff (VK2EO), Box 1734 G.P.O., Sydney.

Meeting Night: Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor Harry Powell, VK2AYP, 9 Russell Avenue, Wahroonga.

Zone Correspondents. North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey, Newcastle: Ron McD. Stuart, VK2ASJ, 98 Dunbar St., Stockton, **Coalfields and Lakes.** Harry Hawkins, VK2YL, 27 Comfort Ave., Cessnock, **Western:** W H. Stitt, VK2WH, Cambiljown, Forbes, **South Coast and Southern:** Roy Raynor VK2DO, 42 Pettit St., Yass, **Eastern Suburbs** Don Knock, VK2NO, 42 Yanko Ave., Waverley, **Northern Suburbs:** Harry Powell, VK2AYP, Russell Ave., Wahroonga, **St. George:** Chas. Coyle, VK2YK, 84 Carlton Cres., Kogarah Bay.

VICTORIA

President: G. Dennis, VK3TF.

Secretary: L. R. Bradshaw, VK3SX.

Administrative Secretary: Mrs. J. Hurley, Law Court Chambers, 191 Queen St., Melbourne.

Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.

Zone Correspondents: Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** P Perkins, VK3APK, 182 McKillop St Geelong East **North Eastern:** A. D. Buchanan, VK3FD, "Booroondal," Wahring, **Far North Western:** M. Folie, VK3GZ, 101 Lemon Ave., Mildura, **Eastern** H. O. Kellas, VK3AHK, Tinambra, **North Western:** C. Case, VK3ACE, Cumming Ave., Birchip.

QUEENSLAND

President: V. Jeffs, VK4VJ.

Secretary: J F. Pickles, VK4FF, Box 638J, G.P.O., Brisbane.

Meeting Night: Third Friday in each month at the I.R.E. Rooms, Wickham St., Valley.

Divisional Sub-Editor: A. Guildford, VK4AP, 38 Bramston Tce., Herston, Brisbane.

SOUTH AUSTRALIA

President W W Parsons, VK5PS.

Secretary R. G Harris, VK5RR, Box 1234K, G.P.O., Adelaide. Telephone: J 1151.

Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor: W. W Parsons, VK5PS, 10 Victoria Avenue, Rose Park.

WESTERN AUSTRALIA

President W E. Coxon, VK6AG

Secretary: J Mead, Box N1002 G.P.O Perth.

Meeting Place: Perth Technical College Annexe, Mounts Bay Road, Perth.

Meeting Night: Second Monday of each month.

Divisional Sub-Editor: R. H. Atkinson, VK6WZ, Box 127, Geraldton, W.A.

TASMANIA

President: R. O'May, VK7OM.

Secretary F. J. Evans, VK7FJ, Box 371B, G.P.O., Hobart.

Meeting Night: First Thursday of each month at the Photographic Society's Rooms, 153 Liverpool Street, Hobart.

Divisional Sub-Editor: V Dore, VK7JD.

Zone Correspondents: Northern: C. A. Cullinan, VK7XW, 12 Montrose Place, Launceston; **North Western:** R. K. Wilson, 4 Menai St., Burnie, Tasmania.

FEDERAL

FAO ON 21 Mc.

The V.E.R.O.N.—Netherlands Section of the I.A.R.U.—have advised that the PA0s are now permitted to operate in the new 21 Mc. band. The official list of frequencies for the use of licenced Amateurs in the Netherlands is as follows —

3500— 3800 Kc.	144— 146 Mc
7000— 7150 Kc.	430— 460 Mc
14000—14350 Kc	1215— 1300 Mc
21000—21450 Kc	2300— 2450 Mc
28000—29700 Kc.	5650— 5850 Mc
	10000—10500 Mc

1952 REMEMBRANCE DAY CONTEST

Judging by the "Solid Walls of QRM" evident on the bands—particularly the 7 Mc. band—during the Remembrance Day Contest last month, it seems a certainty that the participants reached an all time high, indicating an annually increasing interest in this most worthy Contest.

Particularly noticeable was the gentlemanly operating technique employed by most operators in waiting as long as practicable before "coming in" on top of another station—in other words, until serial numbers had been satisfactorily exchanged. This consideration of the other man was exemplar of good "Hamming," and will no doubt show up in the final results by the actual contacts made by all participants.

The members of the N.S.W Division Contest Committee have again been co-opted by F.E. to function as the Federal Contest Committee, and all participants are urgently requested to forward their Logs through their respective Division without undue delay so that the arduous work of checking the Logs will not be unnecessarily impeded.

The sooner the Logs reach the Committee, the sooner the results will be known.

September 12 is the last day the Logs can be received by the Committee—See Rule 16, August "A.R."

Incidentally, the Contest again proved that the 7 Mc. band—in particular—is not as "useless" at night as most Amateurs think. So what about using it more!

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FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Cards from HZ1HZ state, "This city, Mecca, has no other religion but Islam, and no other foreigners but Muslims."

A card from VU2BC relating to a phone QSO on 6th April, 1952, is addressed to VK3P— and states, "Thanks Redge." The card from HZ1TA confirming phone QSO on 16th January, 1952, and addressed VK3AW is still unclaimed. Owners please apply this Bureau.

Stan Mayne, VR2AS, writing under date of May, 1952, states, "Hurricane hit me hard, smashed up the business, but my home safe. The salt air got into all trannies and they blew up one by one. The business lost the top storey and of course the frail ceiling couldn't keep out the rain, so for a month or so it poured in and we had to wade through water. May get on again with QRP soon."

Felix Frauchette, FK8AC, on furlough in France, has been issued with the call sign F3GQ, and expects to come on the air for three months commencing middle September During this period he will be located at Tamaris.

Interesting details of the life and conditions on Macquarie Island are given by Eric Macklin, VK1EM Winds of 80-90 m.p.h. velocity are commonplace and constitute the worst enemy of radio by bringing down the antennae. A new 100 watt Tx to replace the 50 watt job now in use, has been constructed and will take the air shortly

During end of July, W0ELA was located at Brunei signing VS5ELA. The itinerary provided for a visit to Sarawak but radio conditions were so poor that he abandoned the projected visit and returned Stateswise.

It is stated that it is now permissible for DU stations to contact all other Nations. While confirmation of this statement has not been sighted, observations on the air support the rumour

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NEW SOUTH WALES

The July meeting of the N.S.W Division was held at Science House on Friday, 25th, with the President, Mr. John Moyle, in the chair John looked a bit battered with a piece of sticking plaster over his right eye and deemed it necessary to forestall facetious remarks by explaining at the outset that he had been in bed with two carbuncles It was announced that the Annual Field Day would be held at Woy Woy on 16th November and it is hoped that it will be an even bigger success than last year's effort. Put the date down in your appointment book now so that you will keep the day clear of other engagements.

Dr Bob Black, VK3QZ, VK2QZ/8/P, VR4AF, was then called upon to talk on his experiences in the Trobriand Islands and the Solomons with a Type A Mk. III. rig. The talk was well illustrated with lantern slides and the rather sparse attendance, which braved the very inclement elements, learnt quite a lot about geography and ethnology as well as portable operation in the tropics. Bob exhibited a wealth of dry humour which one had hardly realised was there and gave us all a very satisfying experience.

After the lecture, Bob answered a barrage of questions on all sorts of subjects and finally persuaded Dr. Holt, of Honiara, Guadalcanal, on to the platform to assist him. The discussion became very medically technical at times but none the less interesting. Dr. Holt has a VR call sign but has not been very active lately mainly on account of receiver trouble.

General business followed and suggestions for suitable lecture subjects were called for A few good suggestions were received, but if anybody has any ideas, please trot them along to the Hon. Secretary It may be some time before a suitable lecturer is tee'd up but finding out what would interest the members is the hardest part of the battle and if you want to know about some particular matter there are probably plenty of others who do so too, so let us hear from you. The meeting concluded with a short report from the Federal Councillor

WESTERN SUBURBS

2AXZ not heard much of late, busy with his new projector and other photographic gear 2AAB has better modulation since he cleaned things up, nice signal now Barry, what about some DX? 2ARW on the band with nicely modulated signal, pleased to hear you again Ray 2APT is back on his beam, now of course horizontally polarised, but the signal on the vertical was very fine indeed. 2NJ's beam will soon be rotating. 2XH building test gear 2XJ worked wonders with his signal of late, modulation much improved also 2AWU working the DX on 21 Mc. 2OQ back on again recently. 2HX logged the other night on c.w.!

The Burwood Radio Club is meeting each Tuesday night at Greenwood Hall, Liverpool Road, Enfield, the 144 Mc. Tx is being built by degrees, should be on the air in near future Visitors always welcomed and assured of a good night.

2XU heard on 7 Mc. recently, getting a little practice for the R.D. Contest. 2AER still bashes

W.I.A. ACTIVITIES CALENDAR

October 4-5: VK-ZL DX Contest (all bands), C.W. Section.

October 11-12: VK-ZL DX Contest (all bands), Phone Section.

December 6-7 European DX Contest (all bands), C W Section.

December 13-14 European DX Contest (all bands), Phone Section

WHAT DO YOU THINK?

The Magazine Committee have, from time to time, received letters suggesting the elimination of the Divisional Notes.

In view of the restricted size of the magazine, the Committee are seriously considering acting on this suggestion.

However the Committee consider that Divisional Notes of a general character should be published. That is notes on the general activity of each Division; personal notes will be completely eliminated. What do you think?

7 Mc occasionally, also 14 Mc. DX. 2KT was a visitor to our shack, displaying great interest in the compact beam here. 2AAH getting his rotary adjusted, certainly looks a fine job. 2AIA has been ill but is gradually recovering, spending his convalescence building a c.r.o. and n.b.f.m. modulator 2APL fairly consistent on 14 and 7 Mc. 2ID getting rid of the herbs on 3.5 Mc. with n.b.f.m., nice stuff.

2SI has been holidaying, quite active on 3.5 and 14 Mc. 2AIR plans building the rig to end all rigs. 2ALO still knocks a few over on 14 Mc. phone, waiting for ten to open. 2AGG not yet on the lower frequencies, but will make a move in the right direction 'ere long.

NORTH COAST ZONE

Conditions on the bands have not been really inspiring this month, particularly for local contacts. 80 mx appear to be the only band that one can rely upon for this purpose. Short bursts have been heard from 2XO, 2QV, 2SR, 2WQ, 2ADE and 2NY on 40 and quite a few DX stations have been heard calling 2XO, 2QV and 2DX on 20; 21 and 28 Mc. appear to be very quiet. Roy 2NY has developed an interest in tape recorders, whilst fellow Grafton Ham 2WQ not only has a severe cold but had the misfortune to "do in" his mike.

Visiting Kempsey to see his mother on her 80th birthday was Jim 2AJR who also found time to spend a few hours with 2AHH. Jim has gone away with the intention of getting onto 80 after a few QSOs from Kempsey. By the time these notes are published the Remembrance Day Contest will be over and I hope the North Coast boys will have had good hunting and as many as possible will have enjoyed the true spirit of the Contest.

MAKE A NOTE IN THE LOG

The Victorian Division will be exhibiting at the All Models Exhibition to be held in the Melbourne Exhibition Building from **Saturday, 30th August,** to **Saturday, 6th September.**

It is hoped to have transmitters running on 580, 144, 50, 14, 7 and 3.5 Mc. As band conditions are very poor, we would greatly appreciate any effort on your part to try to contact the VK3WI transmitters. The stall will be manned from 10 a.m. to 10 p.m. each day, and if a contact is made, please use plain language as it is hoped to have both the in and out signals audible to the general public.

SOUTH WESTERN ZONE

John 2AFQ heard on 80, has a rhombic on 80 with 240 ft. per side about 40 ft. high; Rx operates off 32v lighting plant and Tx on 230v from a 1½ k.v.a. motor alternator. 2OJ heard on 80 with a nice sig. Les 2PI active on 40 and 80. Reports that the Canberra Radio Club are now the proud possessors of a new club room, 80 ft. by 18 ft., also has a very good location. All the best to members at Canberra.

Gordon 2AIZ active on 40. Ron 2RH has good sig on 80, 40 and 20, using an AT5 with cathode mod., Ron's pet subjects at the moment are a.c. units, how to burn out r.f. meters, and how to cure sore throats. Jim 2BO heard on 40 and 80 with a good signal. Geoff 2BQ also on 80; he is playing with a c.r.o. at the moment, also building a new Tx for 6 mx with an 834. Conditions have been poor on 40 in this Zone during the month especially for the Zone hook-up. As from the first Sunday after the delivery of this month's "A.R." the South Western Zone hook-up will be held on or near 3.7 Mc. at 7.30 p.m. Sunday evenings.—2AJO.

COALFIELDS AND LAKES ZONE

It seems incredible but Ken 2ANU fell victim to power cuts this month—self-imposed restrictions. Geoff finally got the 2 mx rig on the air—12 watts to an 832, heard at 89 in Sydney. No contact over that path to date as the receiving side is not yet straightened out. Harry 2YL paid a visit to VK4 on holidays and managed to repay a visit to 4HA. 2KF has a good signal on 20 and 40, while a little bird whispers that 2KZ has devoted his attention to a shiny new automobile. 2RU doing nicely on 2 mx and has joined the throng in sneaking across the mountains to Bathurst, congrats Major.

2GA has xtal converter for 2 now working 2KR is to be heard on 6, 2 or 40. 2ARV is a hard man to keep up with. He has been North to VK4 and back home only to turn up in 2VU's shack in Singleton for a demonstration of cross-band duplex with 2ADT. Only explanation seems to be the efficiency of the N.S.W.G.R. Phil 2TX has returned from a trip abroad and is making preparations for an early appearance on the air. Singleton may soon have another active Ham as old timer Frank Basset is reported to have applied for a call after many years of silence.

HUNTER BRANCH

Over 30 members and visitors were present at the July meeting held at Technical College, Tighes Hill. Young and old members agreed they learned much from the instructive radio and electronic film features which were shown by courtesy of the College authorities and the Newcastle branch of A.G.E. Ltd. Visitors welcomed by President 2CS included Max Henschel formerly OK2MB. All very pleased to see Chris 2PZ who represented the Coalfields gang at the meeting. On behalf of the branch, the President extended hearty congrats to John 2DZ who has recently been elected President of Newcastle Division of I.R.E.

Despite poor conditions, there has been more activity this month. On a recent Sunday night it was like old times with a local 40 mx phone hook-up. 2AGD making a tape recorder. Ernie 2FP was in the hook-up! The proposed 20 mx antenna still not in operation at 2ANA. Ken 2KG spends a little time on 40 mx phone and c.w. Bill 2AXM has his 813 final on 40, has miniature rig on 80 mx. The complete re-build by Harold 2LV is making slow but sure progress. Stan 2UY regular at meetings but not on air. Always busy, Neil 2XY is converting a TA12C for 2WP, Bill has shifted QTH to Charlestown and expects to be active shortly. Dave 2BZ moving to good v.h.f. QTH at Lambton. Fred 2AGY on 40 and 20 with 100w rig, using ¼ Mc. ¼ wave vertical directly fed from antenna coupler.

40 mx DX still attracts the local c.w. men. Secretary 2SP getting good reports from Wa. Barry 2AFA gets out well too, receiving some DX QSLs now. 2AAI looking forward to holidays; Ron received his first QSL from DL. Jim 2ZC making his 144 Mc. 3/3 rotatable. 2AFX copying the gang on 2 mx, Harry would like a check on his Tx.

Combined Field and Social Gathering.—This great event will be held at Blackall's Park, Lake Macquarie, on Sunday 28th September, and a cordial invitation is extended to all Sydney and Country Hams besides our own Hunter Valley boys to come along and bring the family. Special attention will be paid to the XYL, YL and Harmonic's entertainment, including a 16 m.m. film show which will commence right after lunch. There will be free ice creams, soft drinks, etc., and hot water will be provided. Bring your own lunch. The show will commence at 10 a.m. and among the radio events will be 144 Mc hidden Tx hunt and this will have some very special features!! It is most important that you advise our Secretary, Varley Fitton, at Phone B1874 or Box 13, Newcastle, if you are coming and the number and composition of your party. Adult gents will pay the small fee of 3/-. A train will leave Newcastle at 8.40 a.m. and return from Blackalls at 5.20 p.m. It will be a great day, don't miss it!!

Maitland Meeting.—The September meeting will be held in the 2HR Auditorium, Maitland, on Friday, 12th September, when we will be priviliged to hear a lecture by Angus Robertson. Newcastle boys travelling by car to meet western side of the junction of Tudor and Hunter Street West. Don't miss a very good evening.

VICTORIA

FAR NORTH WESTERN ZONE

Members of the zone have been on a rebuilding programme for the past few months. Chas 3TI constructing grid dip oscillator, new frequency meter, and re-building Tx. Noel 3AUG hopes to have a rotating beam 'ere long. Harry 3MF very quiet these days. XYL plus new junior op keeps him busy, no time for Ham Radio these days. Jim Power has completed his shack and hopes to be on the air in the very near future. Graeme 3SN recently

had holiday in Melbourne. Max 3GZ on at week-ends only, busy with house renovations and no time for Ham Radio. Frank 3FC heard on c.w occasionally, puts a solid S9 signal into Mildura. Geoff 2AHM working a bit of DX on 20 during afternoons, has improved his modulation by modulating both screen and control grids.

NORTH EASTERN ZONE

The North Eastern Zone's Annual Convention has come and gone after being held in the Mechanics Hall in Tatura on 30th July and leaving in its wake as President 3UI, Sec.-Treas. 3JC, zone correspondent 3FD, and Communications Officers, that is someone to report on the VK3WI Sunday morning broadcasts, etc., etc., 3KR and 3WQ. A pleasingly large number of forty members and visitors attended, including some of the senior officers of the State and Federal Executive. It was decided, amongst other things, to hold the zone hook-up on 80 mx instead of 40 mx if the conditions on the latter band are not suitable for intra-state working.

Heard at the Convention. Howard 3YV in good form again. That 3IJ is going to do a D.C.A. technician standardisation course in Melbourne, leaving Chas 3ACW to hold the Institute fort in Avenel. Jack 3PF has built up ex tempore mobile gear he hopes he won't have to use. Later heard that Associate Rex Anderson had passed his A.O.C.P.; congrats OM. Must keep some news on ice men, so more next month. Editor and the weather permitting.

CENTRAL WESTERN ZONE

20th and 21st September—days to remember and keep free—are the days of the Central Western Zone Annual Convention, to be held this year at Horsham. You remember the Ararat Convention last year? It was a good one, Horsham will be better. There will be a hidden Tx hunt on 3.5 Mc. with a new slant, a free for all scramble which will test the portable rigs under tough conditions, and things to see for those not out hunting or scrambling. A contest will be held for the best piece of home-built gear on exhibition, with a worthwhile prize.

We aim this year to plan for the XYLs and harmonics, too (so that the OM will not be having all the fun); so chaps bring along the wife and family. We have a good park available with plenty of playing facilities for the children and a real get-together for everybody.

Those of you who can come for the two days and require accommodation contact Byron Hardinge, 3TA, 32 Natimuk Road, Horsham (Phone 379 or 542), by phone, letter or telegram, but don't leave it late or you may sleep in the park.

Further details will be put over VK3WI, as they come to hand. Make a date to be in Horsham on Saturday and Sunday, 20th and 21st September. Will we be seeing you?

TECHNICAL ARTICLES

The Technical Editor reports that the technical articles' bag is very nearly empty, so how about it chaps?

Don't forget the beginners have to be catered for, so articles on beginners' equipment are also welcome.

[redacted]

3AHK has blown up another power transformer on his modulator, that's the third isn't it Ossie? Anyhow, that's one less earbasher on the air. 3SS and 3SG using new Rx's. 3SS working on a 100w rig using an 813 in the final. David, the junior op. at 3SS, sat for his ticket during the month, looks like another call sign for the zone. Alan Jacka, at Bairnsdale, also sat for his ticket, passed everything except the morse receiving. Jack 3FK expects to be putting out a signal from Bairnsdale shortly. 3ABF continues to put a good signal from Sale although the rest of the boys from over that way are silent. It is rumoured that Howard 3VG may be heard again soon. 3AGF expects to be forsaking us for the charms of VK4 shortly, best of luck at your new QTH Geoff. There are two new Hams in the zone, they are 3AOD and 3VN, both are located in the Latrobe Valley.

The Hams that took part in the emergency operation during the floods, received personal letters of thanks from the Chief Commissioner of Police.

The last meeting of the Sale sub-branch was held at the home of Graham 3GO. It was decided to hold a portable-mobile field day in the Orbost district late in September or early in October. This is with a view to future emergency operation in that district, so blow the cobwebs out of the rigs chaps and let us have a good roll up.

Whatever you do don't forget the Eastern Zone Convention to be held at Bairnsdale on the 1st and 2nd of November.

SOUTH WESTERN ZONE

3JA and 3AKR are building new rigs, Jack hopes to be on the air soon, and Kevin is just putting the final touches to his rig. 3GR heard on 80 mx phone using 2 watts doing well on small rig. 3HG has nearly got all his problems regarding remote control for his diesel generator ironed out and soon hopes to operate his rig using all the comforts of home. Pat 3ADN heard on the hook-up the last few Sundays.

Jack 3ALP bought a wind generator at Werribee, almost ready for transportation back to Geelong. 3II having bad luck with his power transformers, is using 3AGD's rig while John holidaying up in the snow at Mt. Bulla complete with Type 3 and batteries. The best wishes of the zone go to Bert 3BI who has been presented with a new junior operator in the way of a son. 3NU has not been heard of for quite a while so any news re his whereabouts would be greatly appreciated. John 3ASV is still mad on car racing and, like quite a few other members of the zone, is building up a real super duper rig.

GEELONG AMATEUR RADIO CLUB

At the beginning of the month the new President, Mr. Bob Wookey, 3IC, occupied the chair. After the business had been attended to, a letter was read to members which had been sent by Bill 3BU thanking the members for their kindness and expressions of sympathy in his recent loss of his father. The late Mr Brownbill, although not a member of the club, took a keen interest in it, taking part in many field days.

At the following meeting, a large number of members were present. The syllabus for the evening was a lecture by Alf 3AJF on Taxi Radio and had a complete set-up on display. Later he conducted a tour of inspec-

tion to the base Tx. At the final meeting for the month, a sale of surplus gear took place and many "bits and pieces" changed hands. Two new chaps were nominated for membership. The morse class conducted by the President is going ahead very well.

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QUEENSLAND

At the Old Timers' Night, held on 18th July, in the Institute of Engineers' Rooms next to Civic Theatre, Valley, Mr. Leo Feenaghty 4LJ, doyen of Amateur Radio in Queensland, set the right note in his speech of appreciation for the evening. He said: "When an organisation reaches its twenty-fifth year, such as yours, then it has a future, and I sincerely hope that many here will attend another occasion as memorable twenty-five years hence."

Radio Amateurs and their guests, student members and representatives of the trade who attended this meeting left us with no doubt about the future of the W.I.A. in the Queensland Division. From opening to closing of the meeting, one was impressed by the vigour of the Institute generally and its happy relations with other sections of the radio industry.

This was essentially an Old Timers' get-together, carried through in that spirit. It had its more serious moments, notably a very fine address by Past President 4AW on the up and down days of the Amateur Radio movement in 1927 when the Queensland Radio Transmitters League was formed. It also had its frivolous moments, notably the amusing accounts by pioneers on early activities.

But it all summed up to one thing. The door facing the VK4 Division on the eve of its twenty-fifth birthday was a door opening up on a happy vista. All of us who attended the meeting will echo congratulations to the organisers, President 4VJ and Secretary 4FP. Particularly should they be thanked for the excellent manner in which the evening was conducted. Usual business concluded in a mere half an hour and by 8.30 p.m. old timers Matt O'Brien 4MM and Leo Feenaghy 4LJ were our conductors as acting chairman and secretary respectively. We could, with advantage, have more of these evenings.

On occasions such as this it is, of course, in the private conversations, the friendly interchange of news and views, that the real highlights are to be found. But these, unfortunately, are off the record. Of the statements made, and recorded on the tape recorder, kindly loaned by Chandlers Pty. Ltd., quite a few stood out apart from the very fine addresses given by 4VJ, 4MM, 4CW and 4KO.

Mac 4GK amused by reading out extracts from logs of 1930 vintage and even brought along his old 852 bottle for inspection. Bill 4RY endorsed most of 4AW's statements and referred to the efforts of Arthur 4BB, 4EI, and 4AP in bringing the Fisk Trophy to Queensland. Harry 4HR covered our early days on the 80 Mc. band and also paid high tribute to Pat 4KB for his untiring assistance to many present ticket holders. Frank 4JU gave a vivid account of the first round table phone W.A.C. of which he was the VK participant. Madeline 4YL, teen age YL operator supreme around the days of 1935, made some of the newcomers blush for shame after reciting some of her DX worked and contest scores in B.E.R.U., etc. Others to face the tape recorder included 4HG, 4AP, 4SN and 4WF. And, of course, when supper was served the chin wagging that took place had to be heard to be appreciated.

NORTHERN DOINGS (By 4EL)

Harry 4KW heard on 7 Mc. phone, not active lately due pressure of business. John 4FH also heard on 14 Mc. phone, still busy with choirs. Alec 4MA still QRL studying. Bill 4BQ more active on 7 Mc., what about getting on of a night Bill so we can ragchew with you out here in the mulga at 4QN. Harry 4ZP recently had his first QSO on 3.5 Mc. with 4EL. Edgar 4GF not very active lately due to a bout with the 'flu, has a new super, and still puts out a potent signal with that 15w. Ted 4EJ when not entering bowls tournaments is QRL on his launch, he is thinking of installing 7 Mc. gear aboard, so look out chaps! 4XH heard on 14 Mc. with a good signal.

Frank 4QL still working all bands 100 per cent. c.w., and picking up any stray DX of tasty origin (as usual) that happens to filter through; don't know how he finds the time to do all he does and then find time to write a full page of DX Notes in the mag. each month too!!! Jock 4DE not heard much lately. When last seen, 4RU was giving George 4GB "Road Service" at Stuart, when George en route to visit your scribe at 4QN; told George he soon hopes to be on again. 4BX heard very little, but believe he is present at 4JM's shack at odd times. Alec 4JM keeping skeds with an old friend, Ken 2KG, on 7 Mc., packs a wallop on 7 Mc. phone. Bob 4RW talking about putting up a decent 7 Mc. antenna to look for Europeans on the band.

Alan 4BE has a nice compact rig and often heard on 7, 14 and 28 Mc.; putting the finishing touches to a 8JK beam, hope she rakes 'em in Alan! Lundy 4DC heard testing on 14 Mc. c.w., looks like that old timer staging a comeback in the near future. Ted 4MH heard grumbling about lack of DX, but was heard only a few minutes before working a KL7, and got a new one in KJ6, hi! Roy 4AX has got into a groove, yeah, a "microgroove;" Roy's YL ops. are keen classical fiends, hence his absence from the other. Despite shift work at the local beer factory, Herb 4JW pops up now and again on 7 Mc., with a mighty sig and brand new mod.

Andy 4BW keeps skeds with another old timer Harry 4HK, keep a look out for him on 7 Mc., Sunday mornings. Harry 4HK also staging a comeback, is looking for contacts with the lads in Brisbane mainly Sundays on 7 Mc., puts out a potent sig. 4EL keeping the wide open spaces company on 21 Mc., still no sign of that European even on the first day the Gs got the band, noise level does not exist at Clevedon so when I say there are no sigs, well I mean just that, 14 Mc. gives plenty of Europeans and also 7 Mc., but 21 and 28 Mc. no go at all. A welcome visitor from Brisbane was George 4GB who dropped in for an evening and stayed two days, and didn't want to go, the place got him in!

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for July was held in the club rooms to an audience of 94 members and associates, all of whom thoroughly enjoyed a lecture by Mr. D. Robertson (5RN) on "The Tracking of Meteors by Radar." Once upon a time a lecture with such a title would have been the signal for all members to have important engagements for that evening and all that the audience would have consisted of would have been the long-suffering members of the Council and a few others who had not been forewarned. Today however the average member is much more awake to the great steps that have been made in his hobby and its allied sciences, and he is only too anxious to hear all that he can about any branch of radio, especially from such a recognised source as Dave, whose previous lectures on beams, etc., are well remembered. To say that the audience were not disappointed would be to make an understatement, as there was not one member present who did not display lively interest during the lecture and judging from the number and variety of the questions at the conclusion, I think that even Dave should have been surprised and pleased at his audience's reaction. The vote of thanks to the lecturer was ably proposed by "Dougal" 5BY who in his inimitable style managed to slip in several references to subjects remote to radio, much to his listeners' amusement.

Very little general business required attention and with all present having few, if any "winges" to be dealt with, the meeting closed at 10 p.m., although at the suggestion of the chairman, members stayed for some time and indulged in "nattering" among themselves on the subject nearest and dearest to themselves. A very welcome visitor to the meeting was John 2AFW who was on holidays from Broken Hill, visiting his parents in Adelaide. John looked well, and is apparently as keen on Amateur Radio as ever and it was not long before he was on his feet asking questions concerning matters of importance to his fellow Hams.

Two very welcome visitors passed through Adelaide this month, Geoff 3PD on his way to England, and Len 7BQ who was returning home after six months in that country. 3PD called on me at the best broadcasting etc., etc., and 7BQ called on Doc., although there is some excuse for him as his absence for six months from VK would probably explain his making such an unconscious "faux pas." You beaut!! Geoff was quite taken up with the best broadcasting etc., etc., and I rang Arch 5EA at the Police Radio and fixed it with him for Geoff to have a look see.

5EN busily engaged getting his bandswitched rig ready for the R.D. Contest. VK7 should watch this boy, he means business; Ern's mobile rig is working extra well, especially when YL is acting as second op. 5CO has just completed a trip through VK2 and VK3, but Brian says the only Hams he saw were in the Silver City. Recently had a h.t. tranny pass out. 5KS has found it a little cold this time of the year and has taken up the pencil instead. Ron was to be seen recently busily engaged with said pencil at the Quorn Racecourse. What price Doc in the popularity stakes Ron? First favourite! Break it down, break it down!

5BG has been busy putting his new QTH in order and quite a big job it was I understand, but Bob still finds time for the spot on 80 mx looking out for that personage 5LH who claims that his QTH is the garden city of the north. 5AP has not been heard on the air for some time now, understand that audio amplifier for his father has top priority with Ron at the moment. No sign of 5PC on the air lately and if something is not soon heard of Harry, a search party will be formed. Visitor to the Northern Areas this month was ex-5BJ, now 2AFW, from the Silver City. John visited the local b.c. station and also several Ham shacks. This joker certainly gets around.

5VM engaged on new shack, order now replacing chaos; Len manages to find time for plenty of movie activity. 5WG waiting patiently for 10 mx band to open again, on 40 mx on odd occasions. No news of 5JY, if Jim does not report his whereabouts soon, he will receive the same attention from the party that they will give to 5PC. 5NW, who is exclusively a 10 mx man, is having a lean time at the moment but Snow manages a contact or so, now and again. He is confident that this band will improve some day. 5XR has moved into a new shack, and d.c. power may be a thing of the past, at least I bet Cam hopes so; the second op, Jack, does a real good job, handles the mike like an old timer. Nothing much is heard these days from the Whyalla gang, Mac 5CE and Nobby 5GY it is understood are confirmed 20 mx men now, and 5TJ was heard putting an f.b. signal out on 80 mx the other night, and Jim is the only one of the Clare gang heard for months. 5WO busy getting a TA12B on the air and hopes to have it operating by R.D. time. Many thanks for the notes Austin, and hope you can spare time to repeat the dose.

5CH still out in the bush, Claude has obtained an AR301 and material for a new 2 mx aerial. 5TW awaiting the opportunity to replace his aerial, and Tom is another one of the boys who is making a new 2 mx aerial. 5JA has his 2 mx gear operating again, John has been welcomed back to the fold by the gang. 5KU frantically hunting for some 300 ohm ribbon to complete his beam, but Erg is not finding conditions on 20 or 40 mx anywhere near up to expectations. 5MS has at least had the a.c. power installed and it will not be long before the watts are watting back and fore. 5FD has been finding the conditions far from good, but John has managed to work a few stations. Jack Fowler, an associate down the "Mount" way, has been keeping his visitors under nervous tension because they never know when his home constructed tape recorder is operating. 5CJ, like the rest of the boys, is blaming conditions and has the cheek to say that he has been spending most of his time on "the best broadcasting station in the South East." You will pardon me Col, but you are stealing my thunder.

The monthly meeting of the Upper Murray boys was held at Alex Kelly's residence on the heights overlooking Berri, and among those present were Tom 5TL, Hugh 5BC, Harry 5KW, Fred 5MA and an associate member, Ron Kemp, from Berri. It goes without saying that the host, Alex, was also present. A very good session of earbashing, planning, and particular attention to the inner man, was enjoyed by all, together with a thorough doing over of Alex's gear by all present; a n.b.f.m. Tx, and a BC348 were the chief attractions. Further progress was made with the organising of a network on 144 Mc., those with the gear were to get the cobwebs out of it and help those without gear to get some simple equipment working (as a temporary measure). A couple of the boys with surplus 7193 tubes handed some over to the less fortunate and all were happy. The next meeting will be held at the residence of 5TL and the boys are looking forward to it immensely. Mrs. Kelly did her share toward making the evening a success by turning on an extra grouse supper, to which the gang did justice in no mean manner. **Incidentally, I must say that I think that these get-togethers among the boys are a good thing for Amateur Radio, especially in the country areas, because it is remarkable how much can be learnt by listening to a gathering of the boys talking radio; keep it up boys.**

Loud and long are the moans regarding the fact that 5WI has not been heard in some country areas for a long time now due to peculiar conditions. Naturally the remedy for this unfortunate state of affairs is being eagerly sought after by those responsible for the broadcasts, and many and varied have been the suggestions received. However it is believed that the remedy has now been found, and if all is well, then by now the reception of 5WI has returned to normal. In case I have built up your hopes falsely, please do not hold it against me but blame the ionosfee-ianasphee-eyeonos, well any way, blame anyone but me.

To close these notes for this month I must make some illusion to a peculiar letter that I received from a character in VK6 who invited me to call him Harry, and launched into congratulations concerning my recent elevation to the position of VK5 President. Whilst I am

not usually "snooty," I would like to point out to this Harry person that to the best of my knowledge we have never been introduced, and therefore, I cannot descend to the level of Christian names with a rising copy-boy, no matter how good his notes may be. Possibly in a few years time when he is pulling down the salary that "A.R." now pays me, I might call him Atkinson, or even 6WZ, but Harry, never, it is just not done in literary circles. I am sorry Harry but I just could not do it.

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WESTERN AUSTRALIA

By the time this is in print the 1952 R.D. Contest will have come and gone and where will stand VK6? At the head of the list, I hope! But if it doesn't you know who is to blame, don't you? There may be those who can understand and excuse the fellow who says "Oh contests! I won't send logs in—it only means helping VK6—— to win more honour and glory for himself!" You may understand that selfish attitude; I don't. But that's for ordinary contests; the R.D. is different. No one Ham "wins" it—it's a joint effort by a State team, with the much maligned "limelight-seeker" of normal contests doing all the bullocking for you while you pick a time that suits you, work a minimum of contacts and then retire. So I hope every one of you who now read this can say, with an easy conscience—"Well, I didn't let the State down; my log was sent in and it conformed to requirements."

On 13th July, VK6WI gave brief details of Dr. Munro's work on ionosphere research and the previously-mentioned "cylinders" or "troughs" that move about. George also touched on Villard's "Q Multiplier," which sounds to me like an i.f. application of the same gentleman's "Selecto-ject" which some of us have tried. George said it was hoped practical tests would be made with the "Q Multiplier" in VK6 if suitable components could be obtained and if so, further dope would appear in later broadcasts and members' circulars. Incidentally, it sounded that morning as though Dr. Munro's "cylinders" resent being talked about for the 7 Mc. band was certainly screwy. It was later that same day that I heard (and called) PY2BIB on 7 Mc., but the queue of Yanks wouldn't yield an inch to a mere VK6! During July, however, there was usually plenty of c.w. to be worked on the band even if it did mainly consist of three prefixes—VK, ZL and W! One early morning session (0630 local time) yielded nothing. However, towards the end of the month a QSO was managed at 0830 with VS7NG—it would be hard to imagine who was the more surprised.

Note These Dates, Mates: 8th September—Combined Dinner of the W.I.A. and Radio Society of W.A. Tickets available from Council and committee members respectively. **14th September—7 Mc. Scramble.** Blow the dust off the rig, fire 'er up and get in amongst it. It is bedlam while it lasts, but it is a lot of fun. **16th September—Monthly General Meeting.** Remember, meetings are now held on the third Tuesday of each month.

Snooping and Scooping.—6XG writes to say activity at Katanning is at a low ebb. Says 6XF is at the stage where he'd gladly trade an 807 for a re-enamelled golf ball. 6XG's main interest seems to be a re-built v.f.o. Old one, writes George, had so much drift it sounded like the Luton Girls' Choir. Another Ham who has joined the "swing club" is 6RT. XYL, Enid, also enjoys chasing the little white pill.

No signals from Kellerberrin at date of writing. Hurry up, Cyril, we're all waiting for you. Looks as though his arrival in that town may be the signal for the encouragement of one or two local chaps to study for the ticket. 6VK prefers c.w. but comes on occasionally with a nice phone signal, the result of screen modulating the final with a 6J5. Vic is getting to know a lot of the boys through 7 Mc. contacts. Just as well 6MO seems an even-tempered sort of bloke; the comments those uncouth people 6LG and 6WZ pass about his phone quality would cause severe foaming at the mouth in any touchy individual. Never mind, Allan, you can always pass it off as "restricted range with low-level clipping, high level ditto, compression, building-out and nickel-plated wing-nuts." Then everyone you work will say how good it is and immediately ask for the circuit!

This month, my spy asks me the pertinent question, "Who was the VK6 who got a b.c.i. complaint from 300 miles away?" Well, it would have worked only my XYL (who is well trained in these matters) answered the phone and when a voice asked for me, requested the caller's name in her usual brisk and business-like manner. The voice, without hesitation, replied "Frank Beadle." That ripped it! Too bad, chaps, it could have been a good leg-pull. Thanks for the dope on metal rectifiers, Frank. A nice gesture.

Rolo came to light again this month with some notes and these should appear in the "50 Mc. and Above" department. His comments on the lower bands are: "21 Mc., the only VK6s I know to have been on are 6WU, 6AR and self. 6TB has been altering his 28 Mc. beam and now has up a two-element which could be for 21—although I haven't heard him." 28 Mc., "Nothing heard."

Last month, due no doubt to my long-windedness, parts of the notes were deleted by ye Hon. Ed., including a reference to a certain State electing, of all people, its scribe as President. No matter—we can be as rude to each other as we like from now on, we're pen palsey-walseys, aren't we, Warwick?

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TASMANIA

Unfortunately, this month, time does not permit covering the monthly general meeting, which is to be held after the deadline for getting the notes away. However, I feel quite certain that 7AJ's lecture on "16 m.m. Sound on Film" will prove highly interesting, and will attract a good attendance.

Ere this appears in print, another R.D. Contest will have retreated into the past—and in the quiet which follows such intense activity, I feel it may be fitting to cast just one more thought back to those Hams in whose commemoration the Contest was held. Fate decreed that they should not be with us, but let us hope their memory will be perpetuated by many more Remembrance Day Contests to come.

Latest news to hand on 7JB is that he hoped to leave Japan in August, 1952, in order to do a course in Melbourne—and who knows?—Melbourne is not so far from Hobart these days. Once again, congratulations are the order of the day, and they go to Brian 7BH on his appointment as Radio Inspector. We feel sure that things will continue to run smoothly for you Brian, and with a minimum of trouble. Ted 7EJ has now shaken the Southern dust from his feet, and is now resident at East Devonport. Guess you will be showing up soon on some of the bands, so grab a bit of time off from that new love and let us hear from you.

Also some news to hand on 7MY who recently changed over to n.c.s.m. (no carrier, suppressed modulation to you). Alan should be appearing again soon, with the accent on v.h.f., and at the present time is very QRL. We look forward to you re-joining the gang Alan. And now, in passing, we have an un-paid advertisement. An unhappy member, with non-working QXer is most anxious to meet up with another member who possesses one that will work. For further particulars, please contact the Secretary—Oh, Mavis!

7DA has now moved to a brand new home out Glenorchy way, and is finding plenty to do. As a temporary measure only, a certain small room has been taken over for the Ham gear, and I am not alone in the suggestion that you should incorporate additional filters in all power supplies.

Two metres has been rather tranquil, but there have been one or two violent spasms which prove that though it may be down, it's far from dead. Bert 7BC is still coming up the straight on 144 Mc., so a little more haste is called for on that modulator Bert. I believe that's the only hold up now. 7LE and 7DH are endeavouring to keep the ball rolling with very successful all-mobile, all-talking QSOs. 7FM has at last acquired the long awaited 600 aside tranny, and assures me that everything is well in hand for early activity.

NORTHERN ZONE

Col 7LZ has received his certificate as highest scorer in the State for the last Ross Hull V.h.f. Memorial Contest. Zone Secretary Gordon 7GM busy building a multi-band tank for Tx and new multi-band antenna coupler, can now change bands in about 10 seconds; a new v.f.o. is also on the way. Looking bronzed and fit, and with plenty of news of G land, 7BQ returned early in August after his trip abroad. Me thinks Len will be in demand as a lecturer in the near future. Tape recorders are in the news again as 7TE is building one up, and 7HY wrestles with circuits for a tape.

7DB hopes to have rig on the air soon, it has arrived at the new QTH. 7RB is another who should be heard again soon. 7LX read with glee the comments about a 7 Mc. W3JK antenna in VK5JG's "Sunspots and DX" in August "A.R." Then the glee changed to gloom when the super antenna came down. 7XW blew up a power transformer getting a signal on for the R.D. Contest. Heard that VR2AS had the misfortune to lose his antenna system in a recent hurricane; Sam is a VR2 who always offers a helping hand to VKs and he QSLs.

NORTH WESTERN ZONE

The Annual Meeting and Dinner was duly held at the home of Mr. M. Richardson. An election of officers was held but no alteration was made, the officers being: President 7KB, Secretary and Treasurer 7SF, and Zone Correspondent R. K. Wilson. Mr. D. Richardson agreed to be code instructor for the new classes. Our sincere thanks go to Mr. M. Richardson for his untiring efforts toward the working of the zone in the past year and also for securing a room for the purpose of holding classes and meetings.

Those present were E. Sheldrick, S. Medford, M. Richardson, R. Richardson, K. Rancock and R. Wilson. After the meeting had concluded a very nice supper was enjoyed by all.